FOUNDED IN 1856

RAILWAY AGE

A.A.R. Mechanical and Purchases & Stores Division Meetings

JUNE 25, 1949

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WHAT YOUR ROLLER BEARINGS

SHOULD HAVE

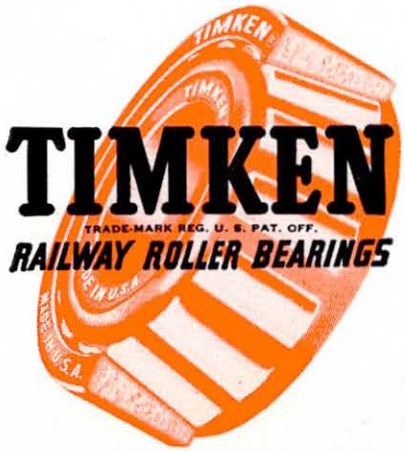
FOR TODAY'S TOUGH RAILROAD SERVICE

The following qualities and characteristics are necessary for the most efficient performance, greatest endurance and longest life in roller bearings for all types of railroad equipment. To meet today's tough operating conditions your roller bearings should have *all*, not merely *some* of them. Here they are:

1. Inherent ability to carry radial, thrust and combined loads with low frictional resistance and without auxiliary supports such as separate thrust bearings or plates.
2. True rolling motion between rollers and races; full line contact between rollers and races.
3. Positive alignment between rollers and races.
4. Adjustability to facilitate assembly and compensate for any slight wear that may occur after prolonged service.
5. Bearing and box assemblies fixed on axles at all times.
6. Positive and accurate control of lateral movement of the axle.
7. Suitability for use with all types of brakes.
8. Made of the finest steel available, with every heat "ear marked" for a particular purpose.
9. Infrequent lubrication and maintenance attention.
10. Application requiring least possible deviation from standard truck parts.

These requirements apply not only to the bearing itself, but also to the housing or box in which the bearing is contained, and the method of attachment to the axle.

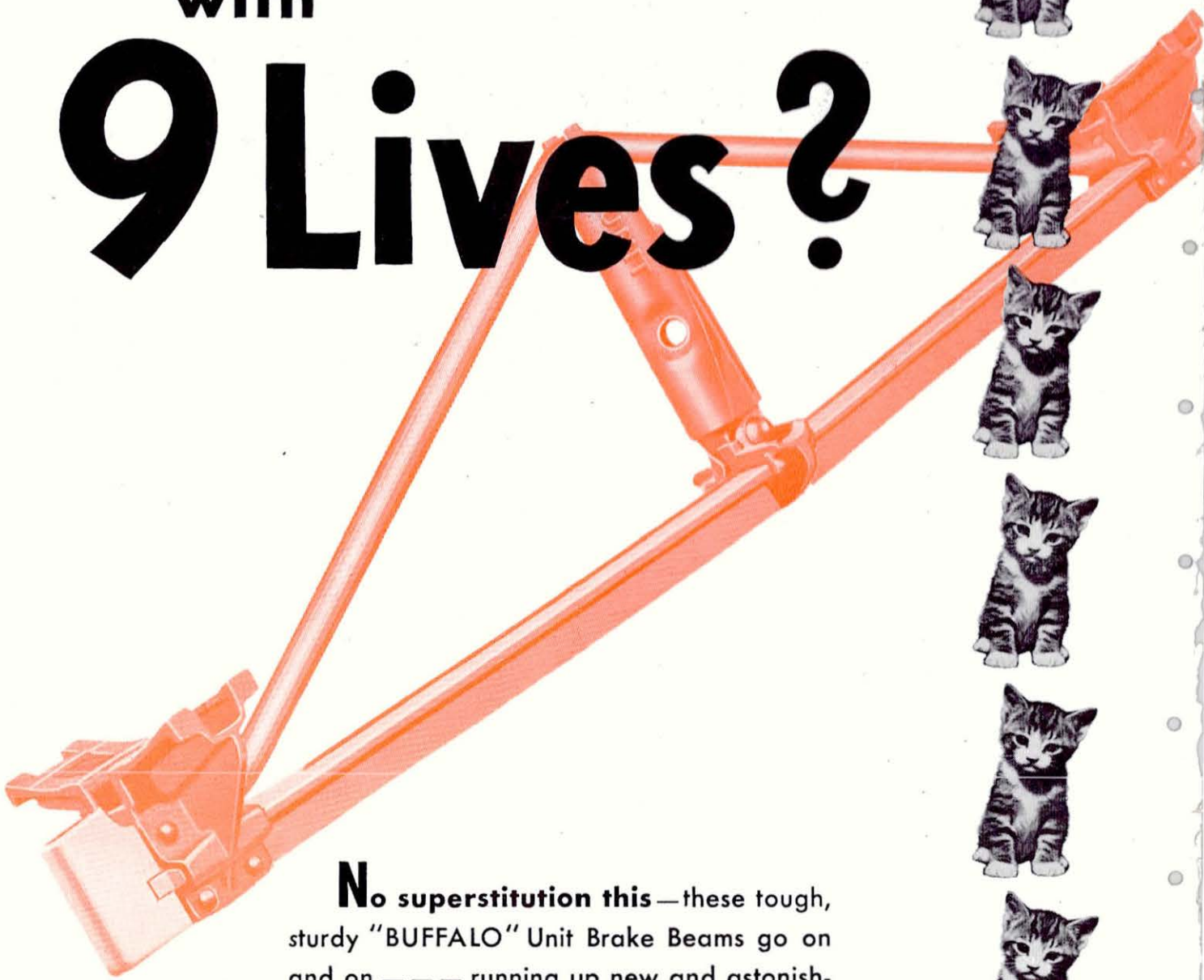
Meeting all these requirements with a dual purpose bearing—both radial and thrust loads—necessitated a long series of experiments and tests under every conceivable condition. Out of these experiments and tests grew a mass of evidence regarding the possibilities of Timken tapered roller bearings that since has been completely borne out by performance records under actual service operation.



THE TIMKEN ROLLER BEARING COMPANY
CANTON 6, OHIO · CABLE ADDRESS "TIMROSCO"

NOT JUST A BALL ◯ NOT JUST A ROLLER ⬭ THE TIMKEN TAPERED ROLLER ⬭ BEARING TAKES RADIAL ◎ AND THRUST →◎← LOADS OR ANY COMBINATION →✳←

EVER SEE A BREAK BEAM with 9 Lives?



No superstitution this—these tough, sturdy "BUFFALO" Unit Brake Beams go on and on — — — running up new and astonishing mileage records.

Can a "BUFFALO" Unit give 9 times more service?

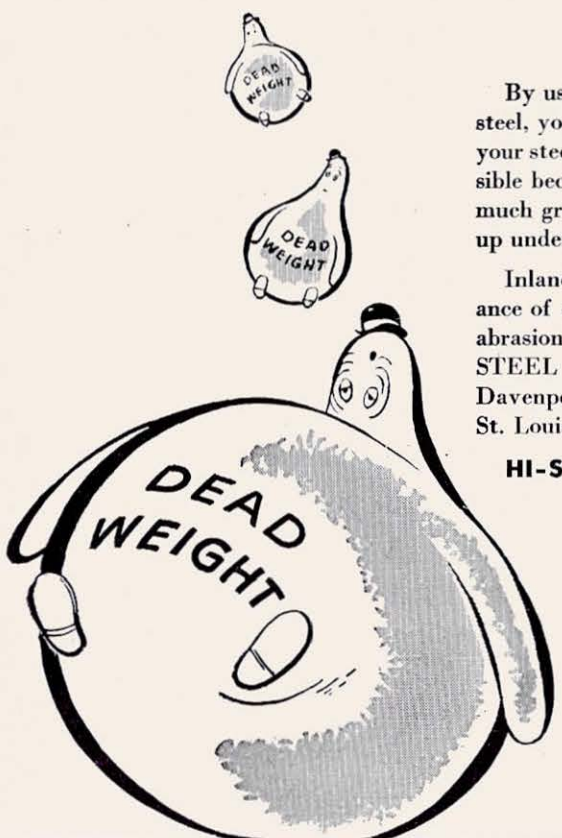
Its not impossible — its not improbable

ITS BEEN DONE!

BUFFALO BRAKE BEAM CO. **NEW YORK**

Squeeze the DEAD WEIGHT out of Your Product

HI-STEEL reduces weight without sacrificing strength



By using Inland HI-STEEL instead of ordinary structural-grade carbon steel, you can reduce sectional thicknesses, minimize dead weight, and cut your steel requirements as much as 25% per unit of production. This is possible because HI-STEEL's high strength-to-weight ratio permits the use of much greater unit stress in design . . . and has 50% greater ability to stand up under impact loads.

Inland HI-STEEL has about five times the atmospheric corrosion resistance of ordinary structural-grade carbon steel, and is far more resistant to abrasion. It can be easily worked hot or cold. Write for booklet. INLAND STEEL CO., 38 S. Dearborn St., Chicago 3, Ill. Sales Offices: Chicago, Davenport, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis, St. Paul.

HI-STEEL meets the requirements of SAE Specification 950.

INLAND STEEL

INLAND HI-STEEL

REG. U. S. PAT. OFF.

THE LOW ALLOY HIGH-STRENGTH STEEL

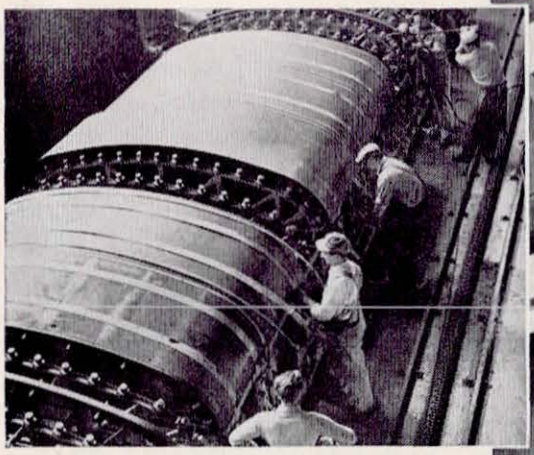
Published weekly by Simmons-Boardman Publishing Corporation, Orange, Conn. Executive Offices, 30 Church Street, New York 7, N. Y. Entered as second class matter at Orange, Conn., under the act of March 3, 1879. Subscription price $6.00 for one year. U. S. and Canada. Single copies, 50 cents each. Vol. 126. No. 26.

U·S·S COR-TEN lends itself readily to mass production methods

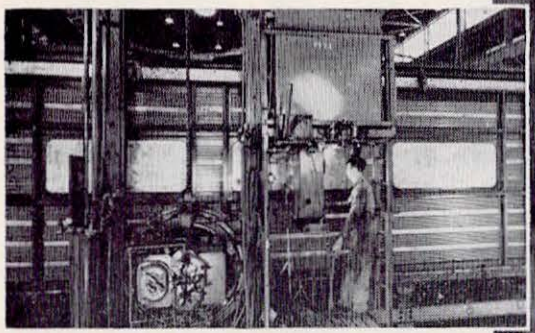
...another reason why

"COR-TEN Equipment" HAS COME TO MEAN

MASS PRODUCING all-welded gondolas in the car shops of the Milwaukee Road. From five feeder lines, sub-assemblies move steadily forward to arrive at two main assembly lines for final welding as shown here.

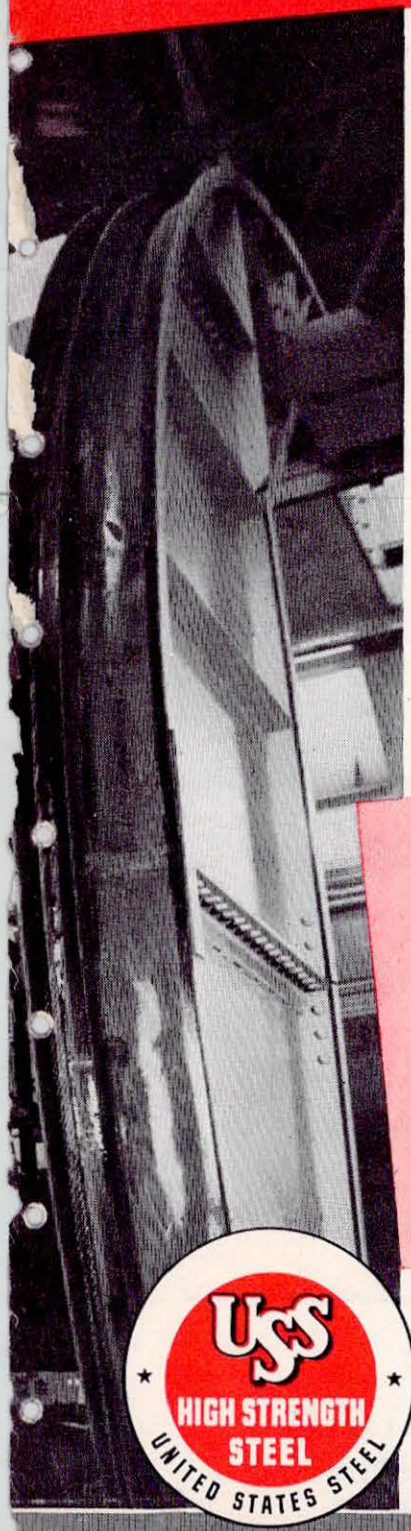


WELDING A PASSENGER CAR ROOF into one integral unit takes slightly over 2 hours at Pullman-Standard. The welding fixture, 120 ft. long is a double unit so arranged that while one roof is being welded another is being fitted up as shown.



PASSENGER CAR SIDE FRAMES and side sheets are welded together on automatic spot-welding machine designed by Pullman-Standard. Machine covers all surfaces, makes 7000 spot welds in 3 hours.

"the best in lightweight construction"



THE highly successful performance of U·S·S COR-TEN in the quantity production of both freight and passenger cars is due to an important and outstanding quality of this premier high strength steel—its *uniformity*.

The fact that COR-TEN's physical, chemical and metallurgical properties are rigidly controlled, results in its consistent and uniform behavior in all phases of fabrication—in cold forming, hot pressing, gas cutting and the various methods of welding.

This makes it possible in working with COR-TEN to set up routine fabricating and assembly procedures that not only minimize the time and effort required but that can be depended upon to produce high quality results.

The superior workability of U·S·S COR-TEN and particularly its excellent and uniform welding properties have been taken advantage of by those car builders and railroad car shops that have made the biggest strides in applying high-speed welding to mass carbuilding.

For example, Pullman Standard by employing the most modern spot- and arc-welding equipment, built lightweight welded box cars on a production line basis. Today they also mass produce streamlined passenger cars—spot-welding an entire car roof in one integral unit in slightly more than 2 hours . . . and 2 entire car sides in slightly over 3 hours.

American Car & Foundry Company started using COR-TEN in 1934, the year in which COR-TEN was introduced, and have been building cars with this pioneer high strength steel ever since. As illustrated on the large picture at the left, ACF has developed a mass-production set-up for the assembly of railway cars. All large sections are fitted into position as completely welded sub-assemblies, where they are held temporarily by tack welds until they are finish-welded in the rotating positioners. Because COR-TEN welds easily, this assembly process is quick and efficient.

The Milwaukee Road initiated in its shops mass-production methods for speeding up the fabrication of 50-ton all-welded box cars. Using heavy spot-welding and arc-welding equipment and simplified assemblies they are now turning them out at the rate of 10 per day.

U·S·S COR-TEN is being used in similar operations at General American, in the shops of the Pennsylvania Railroad and elsewhere—not only because it insures light weight at low cost, unusual ruggedness, and a high resistance to atmospheric corrosion, but because COR-TEN's uniform fabricating qualities keep high-speed production lines flowing smoothly.

The qualities that make U·S·S COR-TEN ideally suited for mass production methods are equally advantageous to those shops building cars in smaller lots and without the benefit of special tools and equipment.

How easy it is to use COR-TEN is best illustrated by a letter received from far away Australia. Written by the Chairman of the Victorian State Railways who introduced COR-TEN in the first streamliner built below the Equator, it says:—"We are delighted with the smoothness with which the work has progressed. Our men quickly adapted themselves to the new steel. No difficulty whatever was experienced with the fabrication and assembly."

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*
UNITED STATES STEEL SUPPLY COMPANY, *Chicago, Warehouse Distributors—Coast to Coast*
UNITED STATES STEEL EXPORT COMPANY, *New York*

UNITED STATES STEEL

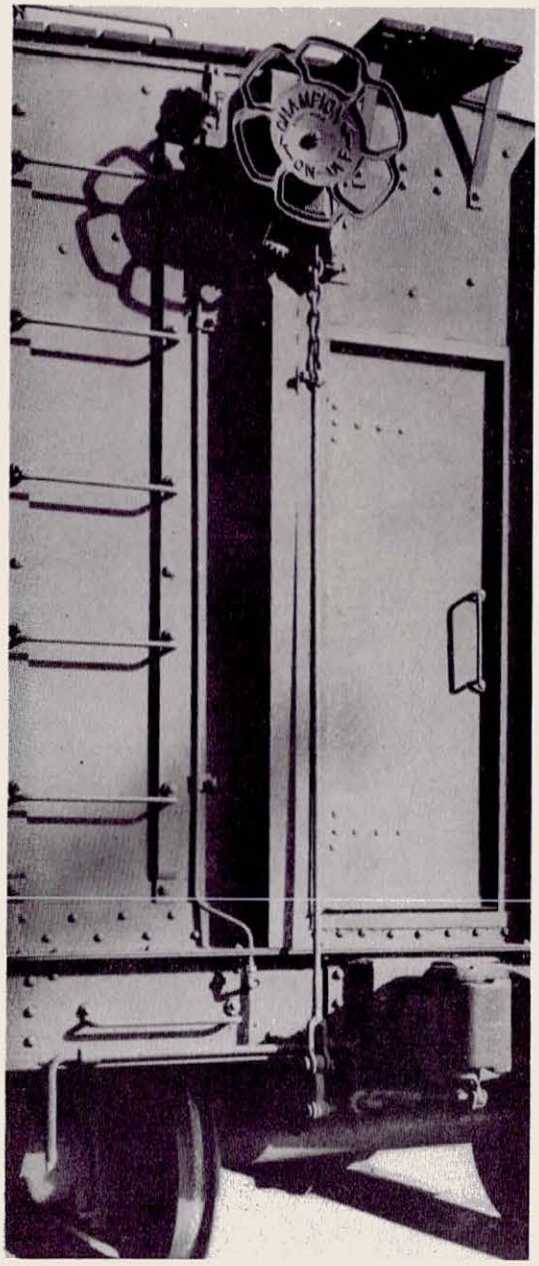
CHAMPION

MICRO-MATIC

MICROMETER CONTROL OF BRAKING POWER.

AUTOMATIC HOLDING OF BRAKING POWER.

HAND BRAKE



SAFETY

NON-SPIN HAND WHEEL

- Maximum braking power.
- Positive automatic holding.
- No levers to operate.
- Controlled by hand wheel only.
- Fast take-up. 2½ turns of hand wheel.
- Quick, fully-controlled release.
- Sealed-in Lubrication, and "Oil-lite" bearings.

A.A.R. APPROVED AND CERTIFIED

THE ORME CO.

CHAMPION BRAKE DIVISION

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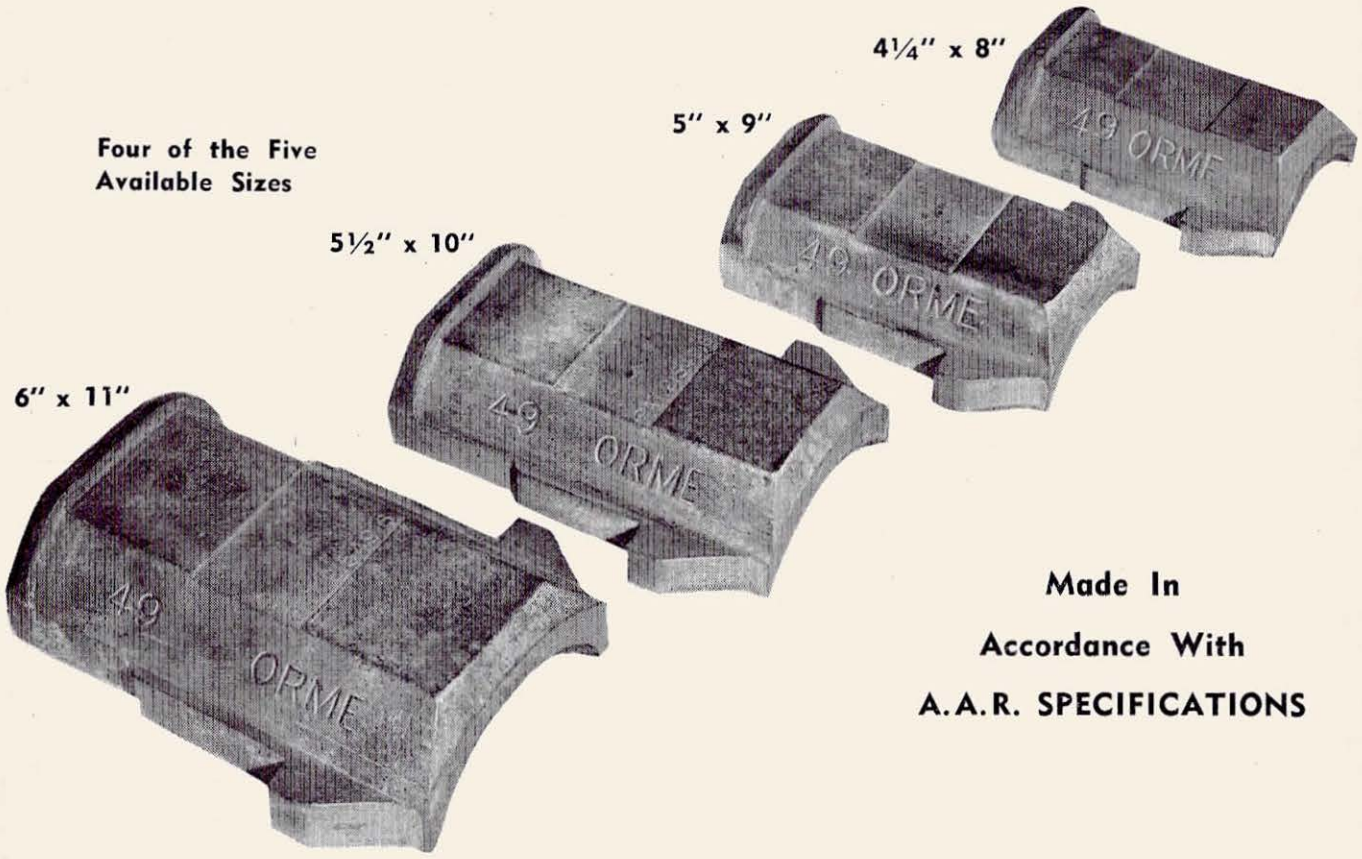
RAILWAY EXCHANGE BUILDING, CHICAGO, ILLINOIS

THE ORME JOURNAL BEARINGS

Dependable for more than A Quarter Of A Century



Four of the Five Available Sizes

Made In Accordance With A.A.R. SPECIFICATIONS

- ECONOMICAL in first cost and in reclamation
- SIMPLE with no complicated parts to get out of order
- EASILY INSTALLED by unskilled labor anywhere
- LARGE BEARING AREA to insure long service life

THE ORME CO.

721 WEST 6th STREET, MICHIGAN CITY, INDIANA

RAILWAY EXCHANGE BUILDING, CHICAGO, ILLINOIS

CUT SET-UP TIME UP TO 50%

Kearney & Trecker's New Milling Machines with Built-In Chuck-Type Table Use Standard Tools to Set-Up Any Workpiece — Eliminate Expensive Workholding Fixtures.

WOULD you like to have a quick-loading fixture tailor-made for your milling jobs? This Kearney & Trecker development is just that. It's designed to get jobs out faster—by reducing material handling and set-up time.

In actual shop tests, workpieces large and small, simple and complex, have been set up and machined in fractions of the time formerly needed. What's more, the simplicity of setups has materially reduced operator fatigue — provided greater rigidity — more accurate results.

You'll find hard-to-hold workpieces with irregular or curved contours easily clamped and leveled, using combinations of jacks and various vise jaws which fit standard bases. Similarly, a choice of bumper stops are used as needed.

Kearney & Trecker milling machines with the Built-In Chucking Table are available in two standard working ranges, plain or vertical styles: (1) No. 4 size machines (42″ power table feed) with 30hp or 30/15hp in the CSM model; and (2) No. 5 size machines (50″ power table feed) with 20hp in the H model, and with 25hp, 50hp or 50/25hp in the CSM model.

Accessories include screw and spring jacks, bumper stops and variety of interchangeable, reversible vise jaws with hard, soft, plain, serrated, flat or radius faces depending on surface or material to be clamped.

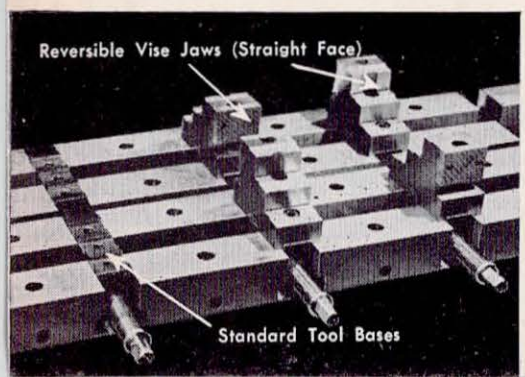
It will pay you to get complete details on Kearney & Trecker milling machines with Built-In Chucking Tables. Contact your nearest Dealer, or write Kearney & Trecker Corp., 6784 W. National Ave., Milwaukee 14, Wis.

Complete new free catalog shows you how these new machines can save you time and money. Write for Catalog CT-10.

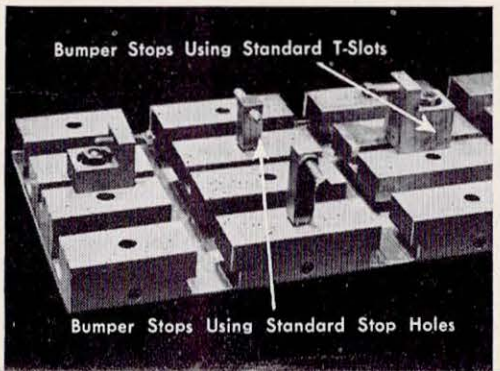
KEARNEY & TRECKER MILWAUKEE MACHINE TOOLS

HOW INTERCHANGEABLE TOOLS FOR CHUCK-TYPE TABLE

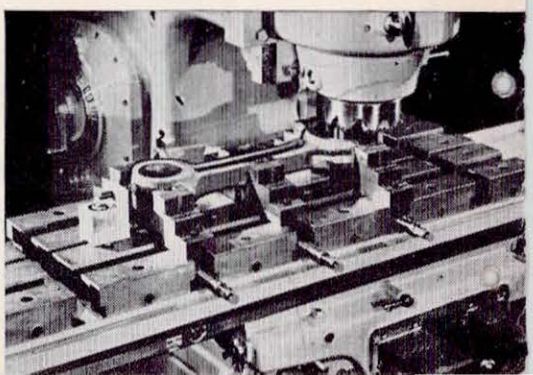
Standard tool bases quickly position in large specially designed table slots. Reversible vise jaws rigidly bolt to bases.



Variety of standard bumper-stops available to fit almost any set-up. Note different heights and positions possible.



Here's how quick positioning of bases, mounting of jaws and single bumper-stop combine to make fast, rigid set-up.

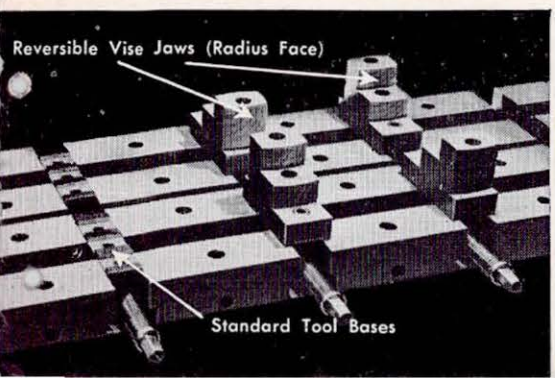


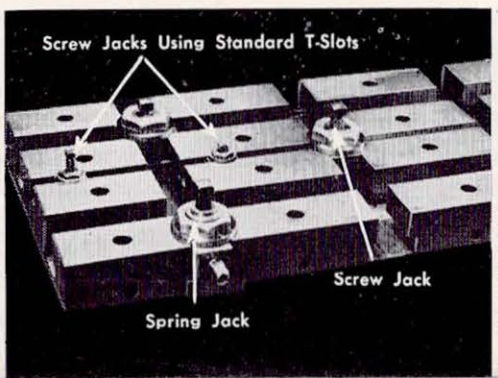
MAKE EASY SET-UPS—ELIMINATE EXPENSIVE FIXTURES

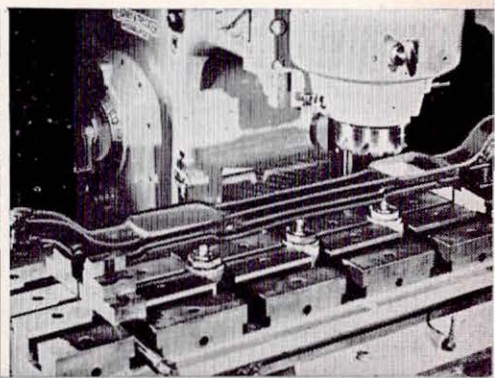
Curved surfaces on workpieces are easily clamped using radius-face, reversible vise jaws rigidly bolted to standard bases.

You get quick, accurate leveling on any workpiece using a variety of screw or spring jacks. Note various positions.

Here's typical, fast, simple set-up for carbide milling an axle part using both screw jacks and serrated vise jaws.







36 WAYS

YOU CAN BE SURE IF IT'S Westinghouse

You can spot the 36 ways with a quick glance at the map . . . 36 modern Manufacturing and Repair Plants in key locations throughout the country.

You can use this service to your own profit because it saves so many ways on every type of electric motive power—diesel electric, gas turbine electric, steam turbine electric and conventional electric. You get the best in service. You eliminate overhead and operating expenses in maintaining elaborate service shops. You eliminate stocking costs for warehousing parts. You can limit personnel to servicemen for minor operations.

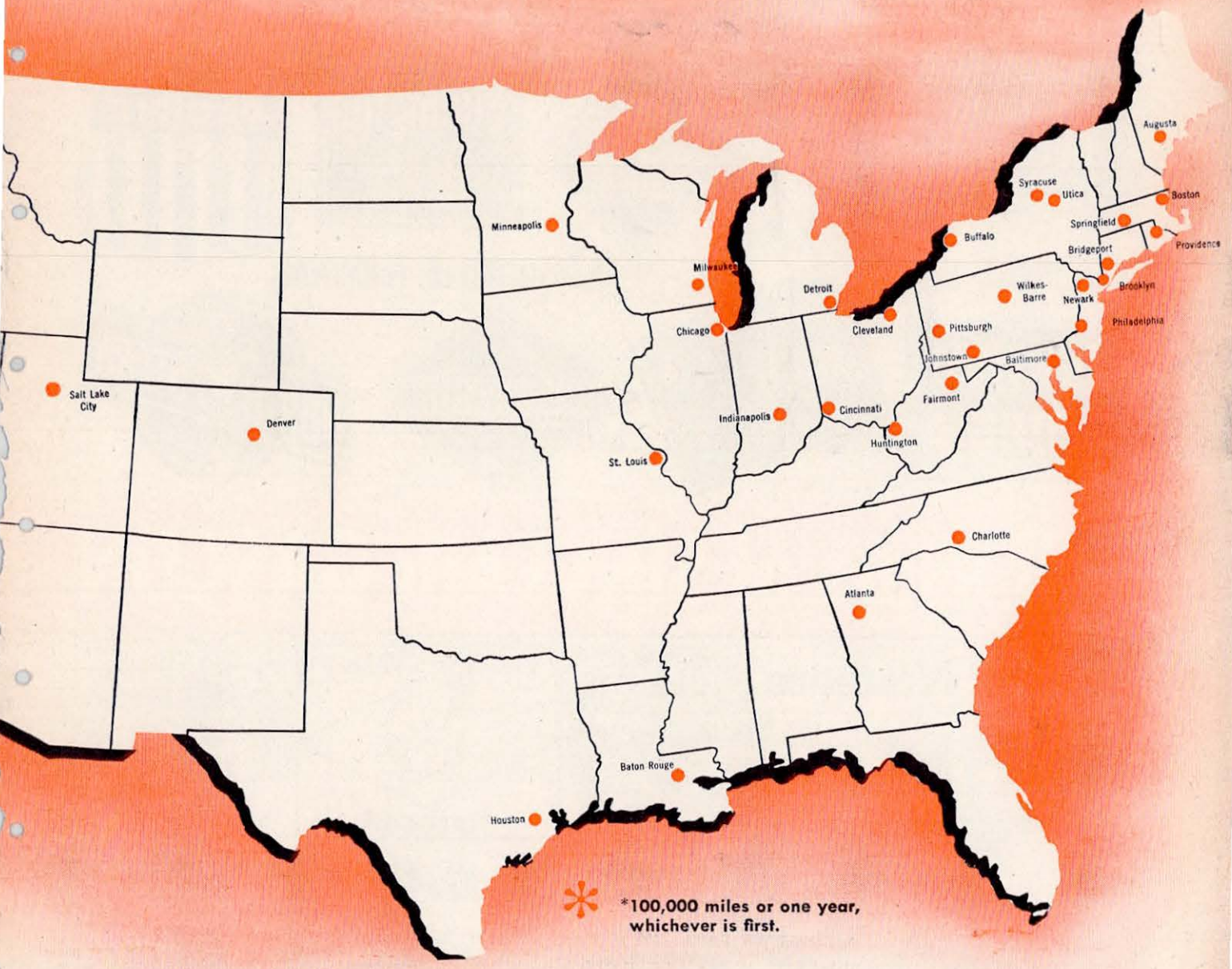
For back of this guaranteed service* are the full facilities of Westinghouse M & R Plants:

1. **skilled electricians for emergency service, day or night.**
2. **supervision by Westinghouse engineers.**
3. **up-to-the-minute, finest precision repair machinery.**
4. **factory-authorized parts, everything needed to make swift repairs on all types of electric locomotives.**

How railroads are cutting maintenance costs and insuring swift, dependable service on electric motive power is further evidence of this quality in servicing by Westinghouse M & R Plants. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-95145

to guarantee locomotives with electric drive for

*100,000 MILES!



*100,000 miles or one year, whichever is first.

WESTINGHOUSE

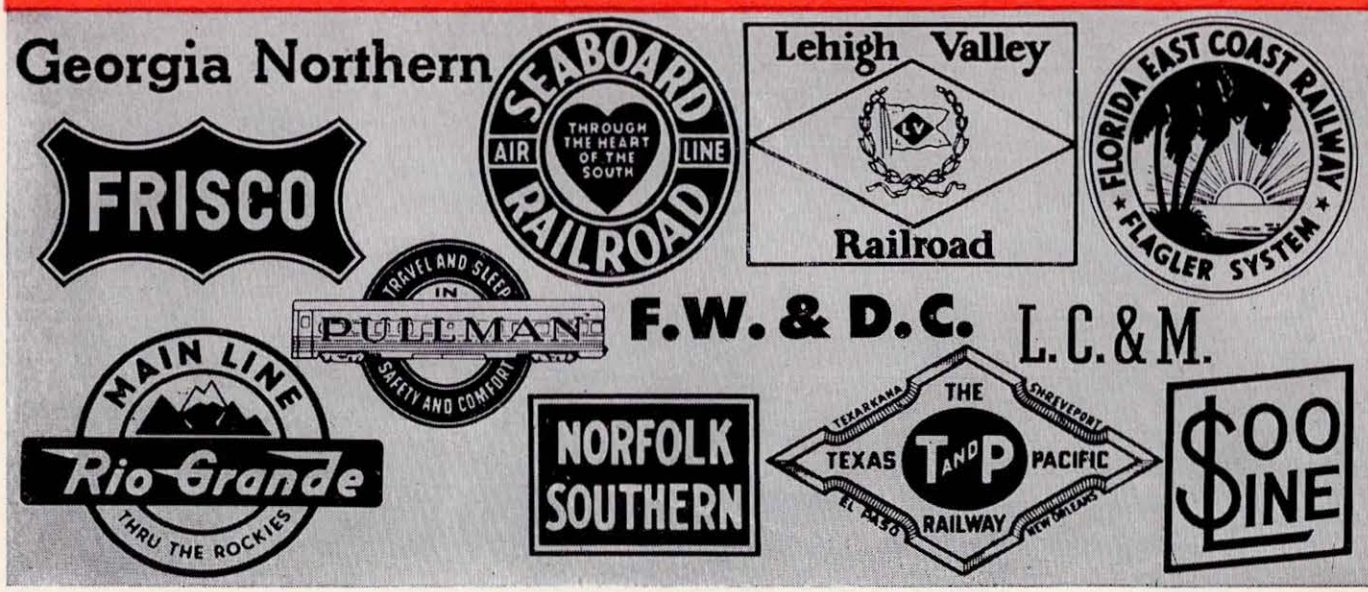
Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

ATLANTIC COAST LINE
VIRGINIA · NORTH CAROLINA · SOUTH CAROLINA · GEORGIA · FLORIDA · ALABAMA
GRAND TRUNK RAILWAY SYSTEM
I.G.N.
Santa Fe
PRR
LINKING 13 GREAT STATES WITH THE NATION
B&O
Albany and Northern
A. & St. A. B.

. . . . Proud Symbols of many

All users of SINCLAIR GASCON



STEELTON & HIGHSPIRE

GREAT NORTHERN RAILWAY

CLINCHFIELD QUICK SERVICE SHORT LINE BETWEEN THE CENTRAL WEST & SOUTHEAST RAILROAD

P.B. & N.E.

SOUTHERN PACIFIC LINES

ERIE

MISSOURI PACIFIC LINES

T.P.-M.P.

# of America's Finest Railroads

CHICAGO E.J.&E.RY. OUTER BELT

JERSEY CENTRAL LINES

N.C.&St.L

M-K-T Missouri-Kansas-Texas Lines

B.-R.I.

COLORADO AND SOUTHERN

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MONON THE HOOSIER LINE

L.O.P.&G.

CHICAGO GREAT WESTERN CORN BELT ROUTE RAILWAY COMPANY

MINNEAPOLIS & ST. LOUIS RAILWAY THE PEORIA GATEWAY LINE

C&EI

GM&O

THE ROUTE OF PHOEBE SNOW Lackawanna

Diesel Lubricating Oil . . . .

NEW YORK CENTRAL SYSTEM

NORTHERN PACIFIC YELLOWSTONE PARK LINE

"Follow the Flag" WABASH

THE SOUTHERN SR SERVES THE SOUTH

SINCLAIR

RAILROAD LUBRICANTS

SINCLAIR REFINING COMPANY RAILWAY SALES

NEW YORK • CHICAGO • ST. LOUIS • HOUSTON

More and More Steel— Better and Better Cars

NAILABLE STEEL FLOORING

Marks Another Great Advance In Boxcar Development

Step by step, unit by unit, steel won its way in boxcar construction until it had supplanted less durable materials in all main units but one. The floor—because blocked loads must be held by nailing—remained unchanged. . . . Then came NAILABLE STEEL FLOORING—combining superior strength and easy nailability—and now the boxcar, in all parts subjected to stress and hard use, is truly a *steel* car.

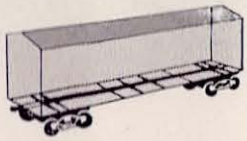
Just as each added use of steel—in underframes, ends, body framing, sheathing and roofs—lowered costs of operation and maintenance, so does its newest use in NAILABLE STEEL FLOORING. You can't beat steel for resistance to stress and wear—you can't equal NAILABLE STEEL FLOORING for durability, freedom from breakthroughs, and maximum protection for either blocked or loose freight.

PATENTS PENDING

Evolution of the Boxcar

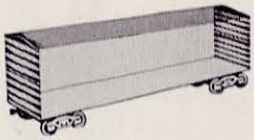
CHIEFLY WOOD

In 1880, steel was used in boxcars only in trucks, truss rods, couplings, fittings and accessories. Cars of those days needed frequent repairs, were short lived.



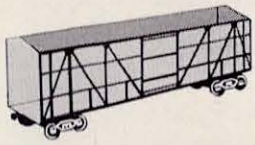
STEEL UNDERFRAMES

Steel became a major factor in boxcar construction when it began to be used in underframes. As a result of its greater strength, downtime for repairs and maintenance costs were substantially reduced.



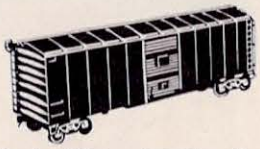
STEEL ENDS

Breakthroughs caused by the sliding of ladings upon sudden stops were common until steel ends came into use. Again, the greater strength of steel resulted in reduced costs.



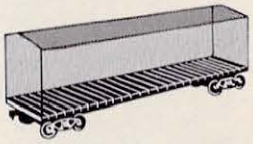
STEEL BODY FRAMING

The more steel, the more strength—and body framing of steel worked a further reduction in maintenance and repair costs.



STEEL ROOFS AND SIDES

With the addition of steel side sheathing and steel roofs, the only non-steel part subject to stress and wear was the floor. Because nailability was essential, it remained unimproved.



NAILABLE STEEL FLOORING

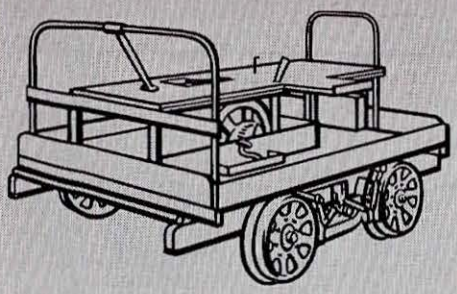
Here is the latest important step in the gradual change to steel construction. NAILABLE STEEL FLOORING, made of corrosion-resisting NAX HIGH-TENSILE steel, has proved its excellence—by providing a superior surface for all types of boxcar freight, and by standing up under heavy freight and modern mechanical handling equipment.

NAILABLE STEEL FLOORING

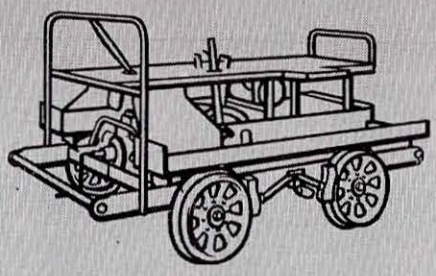
A GREAT LAKES STEEL PRODUCT

GREAT LAKES STEEL *Corporation*

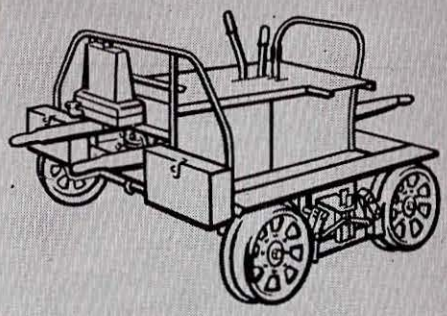
Steel Floor Division • Penobscot Bldg. • Detroit 26, Mich.
UNIT OF NATIONAL STEEL CORPORATION



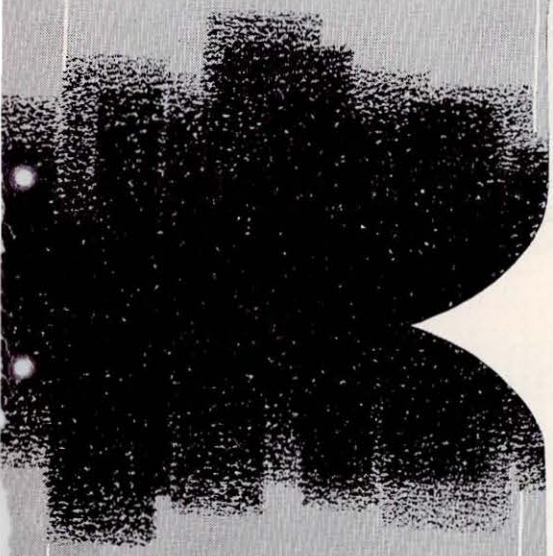
Model 44-B
Standard section car on many roads; powered to haul trailers with men, tools and/or ties.



Model 40-B
Heavy-duty section car; four speeds forward and reverse.



Model 57-D
One-man inspection car; light, fast, dependable.



The longer the ride
The better you'll like 'em...

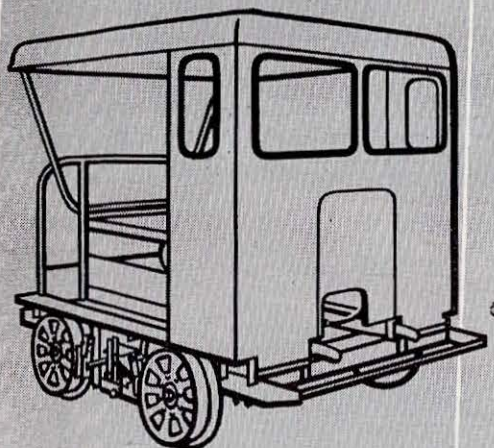
Rail cars built the way railroad men want them . . . with ample power, more convenience and added comfort that make short rides a snap, long rides a pleasure . . . Fairbanks-Morse rail cars . . . first on the roads, *and still* first! Fairbanks, Morse & Co., Chicago 5, Ill.

When it comes to railroad equipment . . .

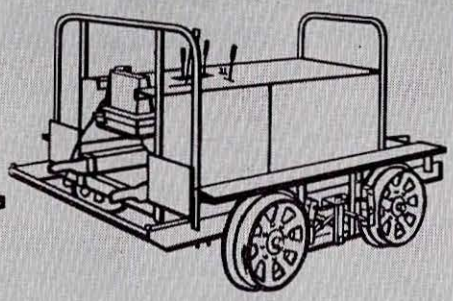
FAIRBANKS-MORSE

A name worth remembering

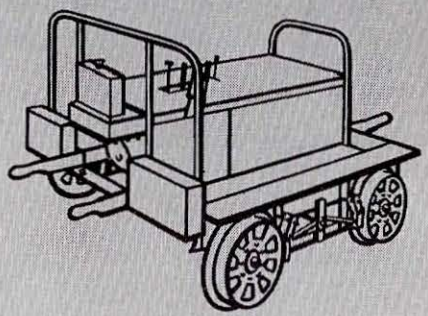
DIESEL LOCOMOTIVES • DIESEL ENGINES • PUMPS • SCALES • MOTORS • GENERATORS
STOKERS • RAILROAD MOTOR CARS and STANDPIPES • FARM EQUIPMENT • MAGNETOS



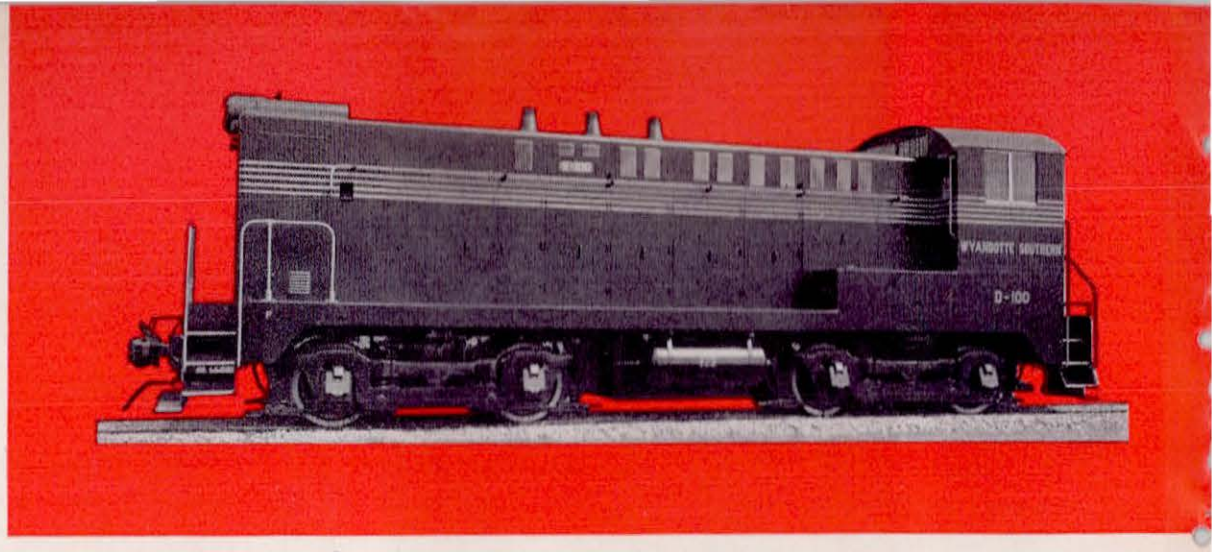
Model 53
6-to-8 man standard section car showing comfort-adding metal cab.



Model 58
Light section car; for 6 to 8 men.

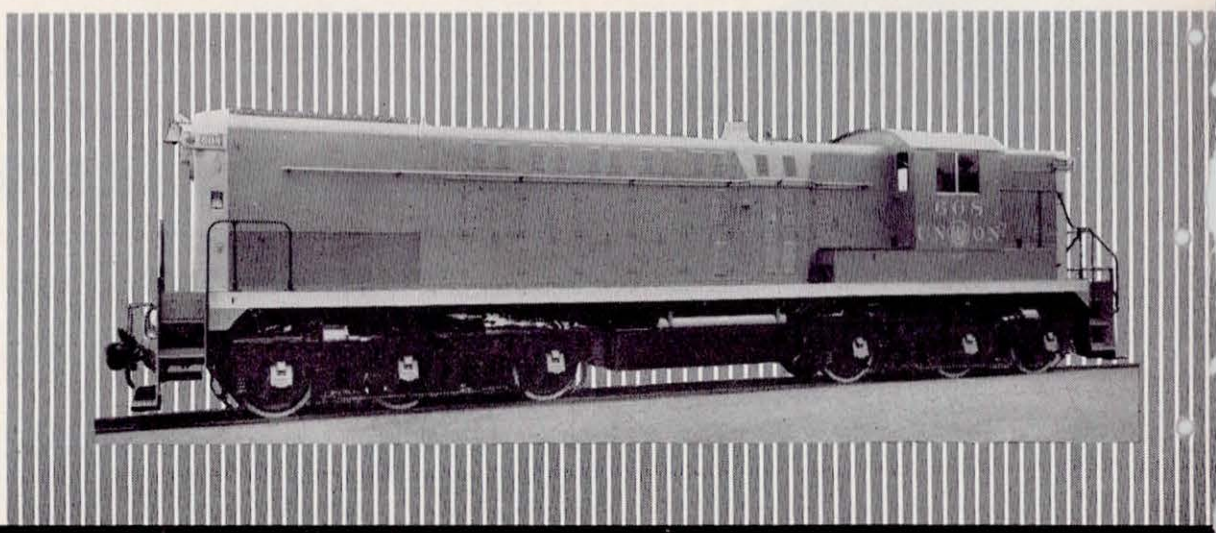


Model 54-D
1-to-4 man inspection car; powerful brakes.

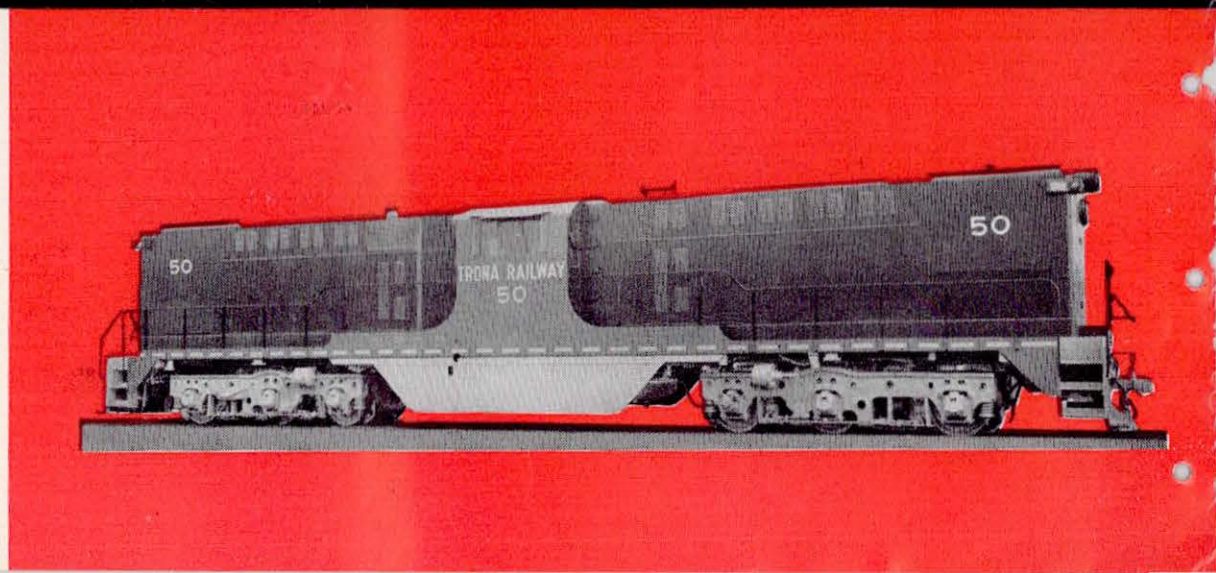


750-hp. diesel-electric switching locomotive powered by one 6-cylinder, 4-cycle, normally aspirated diesel engine.

1000-hp. diesel-electric switching locomotive powered by one 6-cylinder, 4-cycle, turbocharged diesel engine.

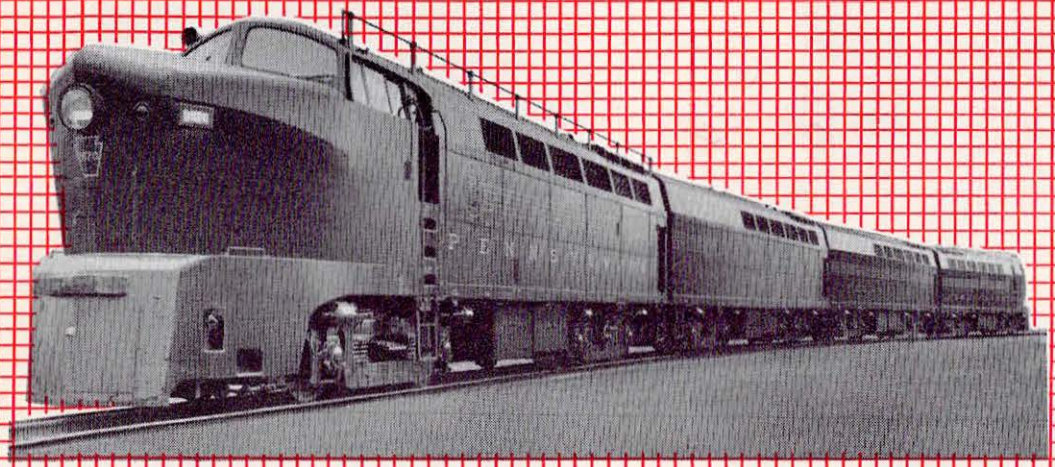


1500-hp. diesel-electric road switcher—one 8-cylinder, 4-cycle, turbocharged diesel engine—6 traction motors.

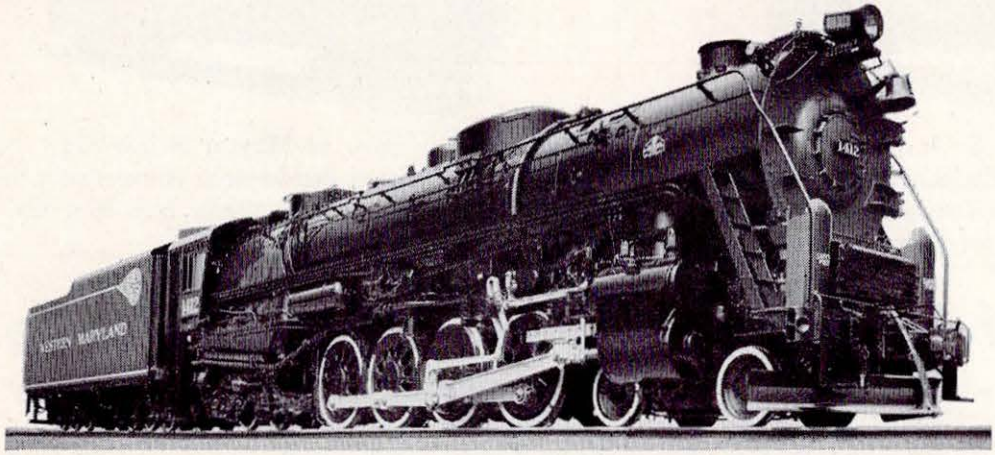


2000-hp. diesel-electric transfer locomotive—two 6-cylinder, 4-cycle, turbocharged diesel engines—6 traction motors.

in the yard or on the main line—your freight problem calls for a Baldwin



6000-hp. diesel-electric freight locomotive.



4-8-4 type steam locomotive for freight service.

To meet today's freight traffic problems with efficiency and economy calls for speedy classification of cars in yards and terminals, and the maintenance of high average speeds with heavy trains on the main line.

Baldwin offers diesel-electric, steam and electric locomotives that can do both these jobs—locomotives backed by long experience in designing and building all types of motive power.

A Baldwin representative would like to discuss your freight traffic problems with you.

BALDWIN PRODUCTS FOR THE RAILROADS

Locomotives of all types, steel tires, rolled steel wheels, axles, connecting rods, springs, boilers, and fireboxes. Hydraulic presses, bending rolls, plate planers, diesel engines, crane wheels, steel and non-ferrous castings and forgings, testing equipment.

BLW THE BALDWIN GROUP

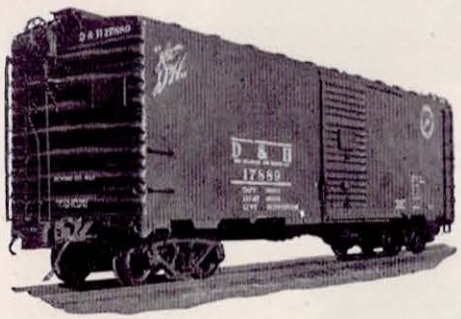
BALDWIN LOCOMOTIVES

The Baldwin Locomotive Works, Philadelphia 42, Pa., U. S. A. Offices: Boston, Chicago, Cleveland, Houston, New York, Philadelphia, Pittsburgh, San Francisco, Seattle, St. Louis, Washington. In Canada: Canadian Locomotive Company, Ltd., Kingston, Ontario.

The trend is toward
LIGHTWEIGHT CONSTRUCTION

Five hundred of these lightweight, 55-ton capacity hopper cars were designed and built by the Chicago, Burlington and Quincy Railroad. Mayari R low-alloy, high-tensile steel was used to help reduce deadweight.

One of a large number of lightweight cars operated by the Milwaukee Road. Mayari R was used to reduce deadweight in such parts as floor stringers, corner posts, door posts and auxiliary side sheets



By designing these cars for low-alloy, high-tensile steel, the Delaware and Hudson was able to reduce deadweight to 19½ tons and raise the payload to 48½ tons. Mayari R was used for underframes and sides.

Lighter underframes of Mayari R low-alloy, high-tensile steel reduced deadweight without sacrificing strength of 400 of these 50-ton box cars for the Great Northern Railway.

Properties of Mayari R low-alloy, high-tensile steel

STRENGTH—Mayari R has a minimum tensile strength of 70,000 psi and a minimum yield point of 50,000 psi.

CORROSION-RESISTANCE—Mayari R has 4 to 6 times the atmospheric corrosion-resistance of plain carbon steel.

RESISTANCE TO DENTING—Mayari R resists denting as well as does conventional car steel 1.30 times as thick.

ABRASION RESISTANCE—Mayari R is superior to plain carbon steel in resisting abrasion.

PAINT ADHERENCE—Mayari R retains paint 20 pct to 80 pct longer than does plain carbon steel.

WORKABILITY—Mayari R can be fabricated by the same methods used for plain carbon steel.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

★ BETHLEHEM STEEL ★

Mayari R *makes it lighter... stronger... longer lasting*

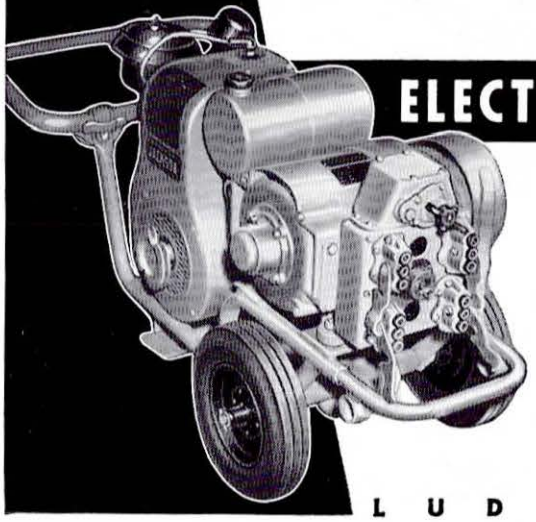
VIBRATORY ACTION

A Prime Requisite for MAXIMUM consolidation of Ballast

IS SUPPLIED *EXCLUSIVELY* BY

JACKSON TIE *Tampers*

The unique, powerful, vibratory action of Jackson tampers with their sidewise, forward and fluttering action, keeps the surrounding ballast in constant motion, feeds it to the end of the blade and shuffles the ballast around until the pieces are tightly fitted together into a closely integrated, soundly compacted and lastingly firm bed — nearly as smooth as a mosaic floor. There can be no particles of ballast wedged on end beneath the tie — no open spaces. Only VIBRATORY action can give you that kind of a job, and JACKSON, alone, supplies it. Complete details supplied on request. Drop us a line.



ELECTRIC TAMPER & EQUIPMENT CO.

•

Four Jackson Vibratory Tampers with the M-2 power plant constitute an extremely flexible outfit. It's ideal for section gangs and also unexcelled when grouped for extra gang operations.

M-2 POWER PLANT

LUDINGTON · MICHIGAN

The Swing is to

WABASH

GM&O

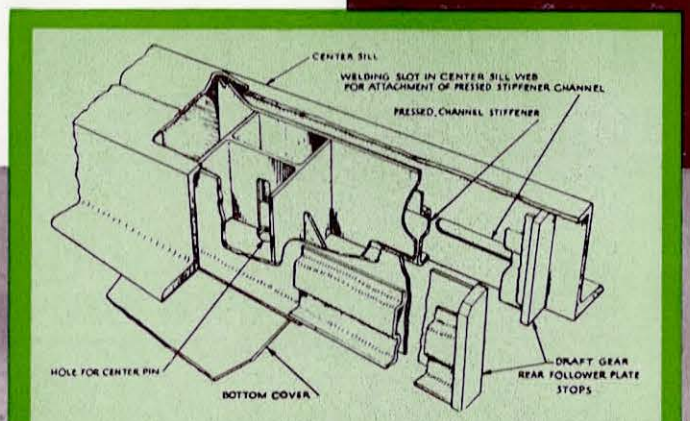
C&EI

ATLANTIC COAST LINE
VIRGINIA NORTH CAROLINA SOUTH CAROLINA ALABAMA GEORGIA FLORIDA

D&I

M·K·T
Missouri·Kansas·Texas Lines

Reading Lines

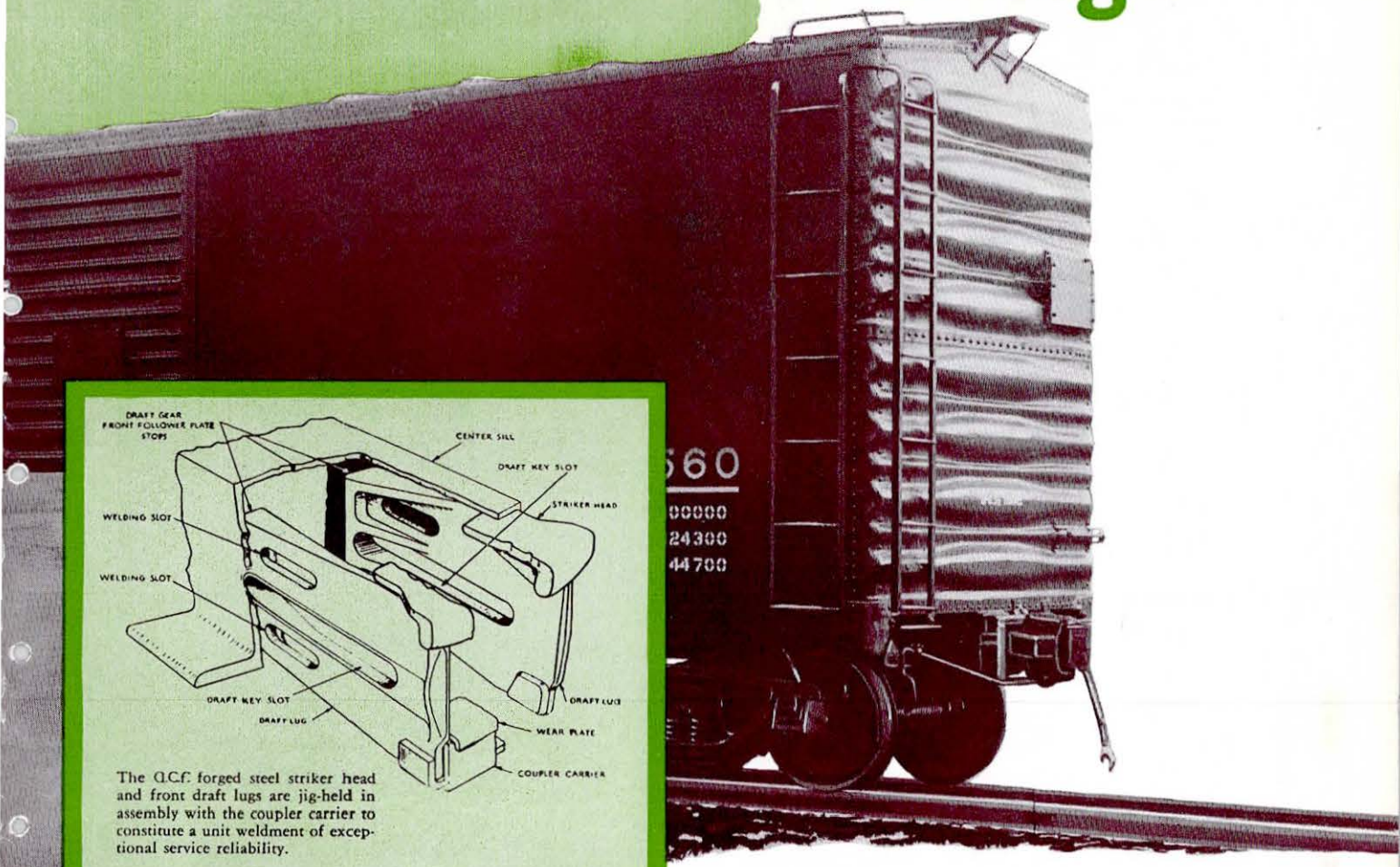

CENTER SILL
WELDING SLOT IN CENTER SILL WEB FOR ATTACHMENT OF PRESSED STIFFENER CHANNEL
PRESSED CHANNEL STIFFENER
HOLE FOR CENTER PIN
BOTTOM COVER
DRAFT GEAR REAR FOLLOWER PLATE STOPS

The A.C.F. combined bolster center filler and rear draft lug assembly of plates and shapes is similarly jig-clamped for precision-aligned welding.

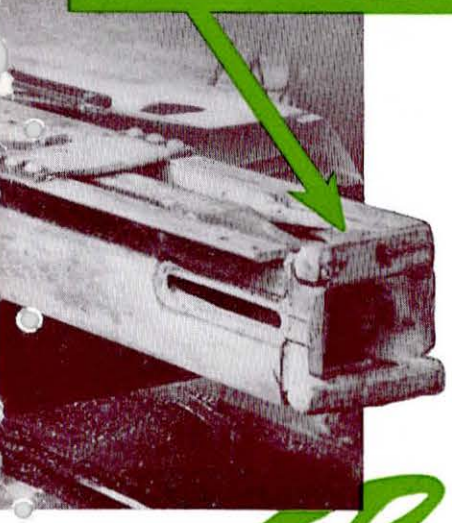
The A.C.F. all-welded underframe is precision-built in jigs which assure the 100% alignment of each structural component. The foundation of 4-square car building.

a.c.f.

standardized Design



The A.C.F. forged steel striker head and front draft lugs are jig-held in assembly with the coupler carrier to constitute a unit weldment of exceptional service reliability.



A.C.F. "Standardized Design" box car orders, delivered and in manufacture, point up a definite trend. The time-factor and dollar-cost advantages are compellingly important. But looming up with equal importance is recognition that A.C.F. has designed around AAR standards to which railway engineers everywhere have contributed so notably. The *plus* values of A.C.F. design refinement, and *plus* strength in extra members, are things you will want to look into. Our representatives will be glad to discuss overall design, and any and all details.

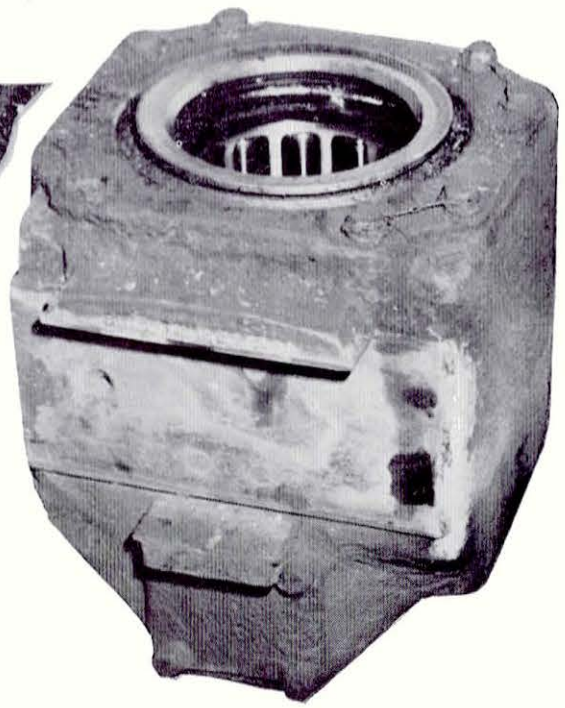
American Car and Foundry Company, New York • Chicago • St. Louis
Cleveland • Philadelphia • Washington • Pittsburgh • San Francisco

Standardized Welded BOX CARS

CAR BUILDERS TO AMERICA'S RAILROADS

How to cut replacement costs...

of roller bearing journal box wear plates



Because wear plates are of the "hard-to-weld" types of steel, welding with ordinary electrodes may produce underbead cracking.

To overcome this difficulty, Diesel locomotive manufacturers recommend the use of stainless steel electrodes.

Airco 25-20 (AISI Type 310) stainless steel electrodes are specifically recommended for this work since this analysis is particularly well suited to take the type of beating to which journal box wear plates are subjected.

Airco 25-20 electrodes are available in two coating types: lime for D.C. reversed polarity, and lime-titania for both A.C. and D.C. application.

For more information about this and other Diesel welding applications, write your nearest Airco office for a copy of, "Diesel Locomotive Maintenance Welding." (In Texas: Magnolia Airco Gas Products Company. On West Coast: Air Reduction Pacific Company.)

COSTS COME DOWN UNDER THE AIRCO PLAN

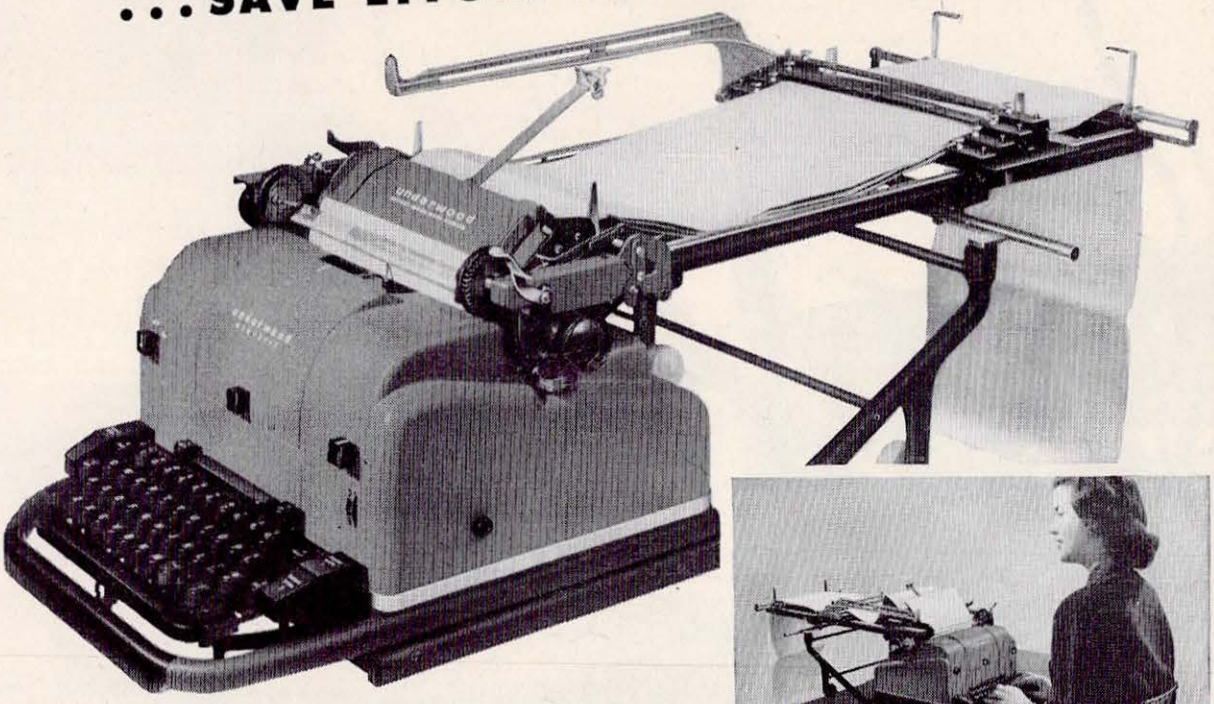
AIRCO **AIR REDUCTION**

Offices in All Principal Cities

Headquarters for Oxygen, Acetylene and Other Gases...Carbide...Gas Welding and Cutting Machines, Apparatus and Supplies...Arc Welders, Electrodes and Accessories

No loose carbon paper to handle

. . . SAVE EFFORT . . . TIME . . . MONEY!



Type your waybills and freight bills the Underwood All Electric way. Get more work . . better work . . . in less time.

Move Carbons from each completed set of forms into the next set without touching or juggling messy single sheets of carbon paper . . . eliminate carbon waste . . . cut costs.

Zip! As each completed set is removed, the next set automatically feeds into position, ready instantly for typing . . . eliminate non-productive operations . . . speed up production.

. . . with the New Underwood All Electric
FANFOLD WRITING MACHINE

With this machine, your office workers never waste time, juggling messy, loose carbon paper. One simple, easy loading operation and they can type up to 1500 sets of waybills, freight bills, orders, requisitions, or other multi-copy forms . . . without changing carbons.

Instead of using loose or padded forms, you simply purchase the same forms printed in long continuous strips containing 500 to 1500 sets which are fed chain-like into the Underwood All Electric Fanfold Writing Machine.

Instead of employing loose sheets of carbon paper, the carbon paper is fed from long sheets or rolls. As each completed set of forms is discharged from the machine, the carbon paper is automatically moved into the next set of forms. The operator merely types and removes the completed forms, the machine does the rest.

In addition, the new Underwood All Electric Fanfold Writing Machine incorporates every modern refinement and feature essential to maximum operating simplicity and speed, including Underwood's renowned ALL ELECTRIC KEYBOARD.

It is a pleasure to operate this new Underwood. The same light finger-tip touch produces one or many perfect copies. Controlled electric power provides the energy that makes the operator's work simple and easy. Increased speed without fatigue is assured.

See this new Fanfold Machine at your local Underwood branch . . . or mail the coupon for full information, today!

UNDERWOOD

Underwood Corporation

Accounting Machines . . . Adding Machines . . . Typewriters
Carbon Paper . . . Ribbons
One Park Avenue **New York 16, N. Y.**
Underwood Limited, 135 Victoria St., Toronto 1, Canada

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Sales and Service Everywhere

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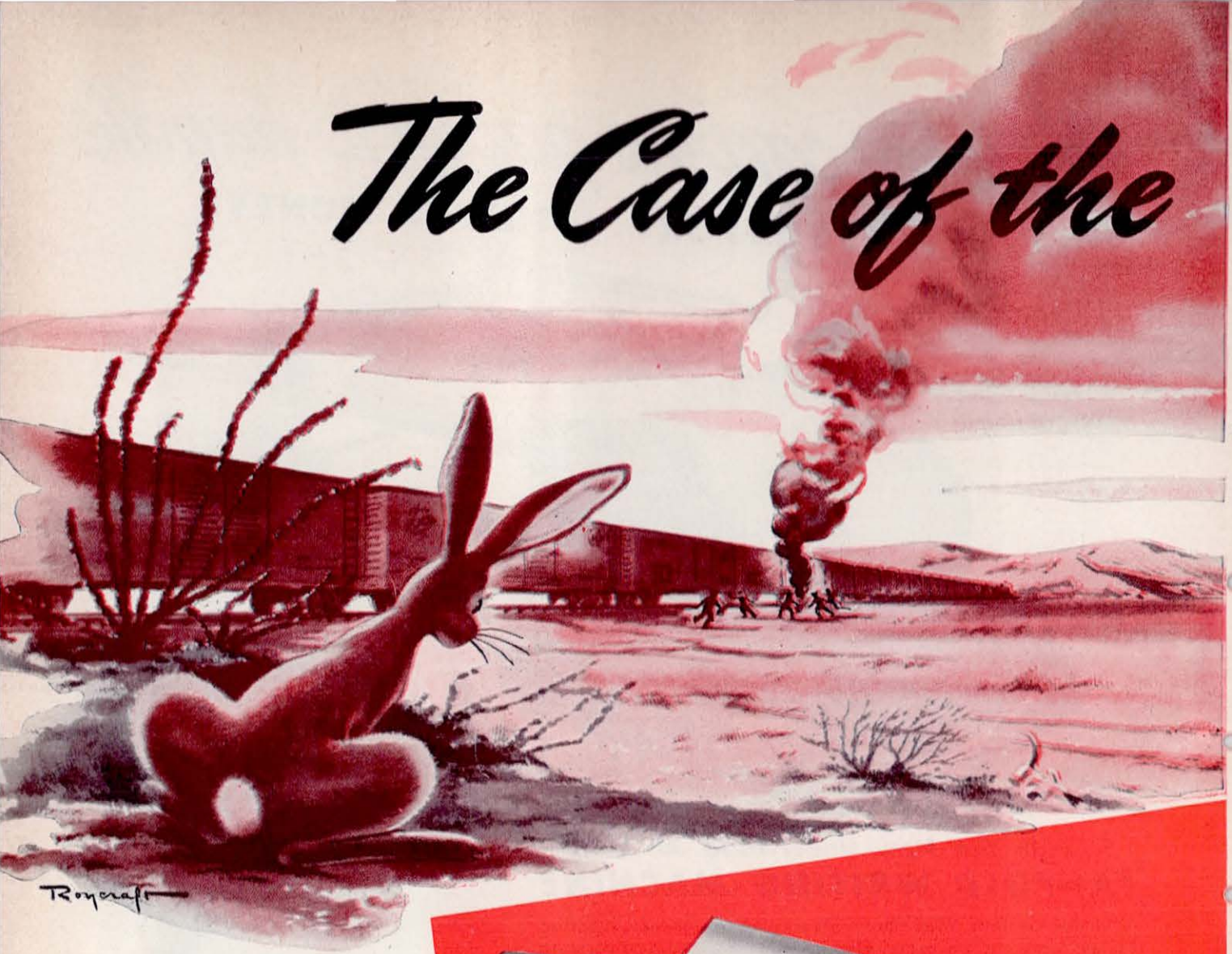
Please send me new illustrated folder describing the New Underwood All Electric Fanfold Writing Machine.

Name of Company. . . . . .
Your Name and Title. . . . . .
Street Address. . . . . .
City . . . . . Zone. . . . . State. RA-6-25-49

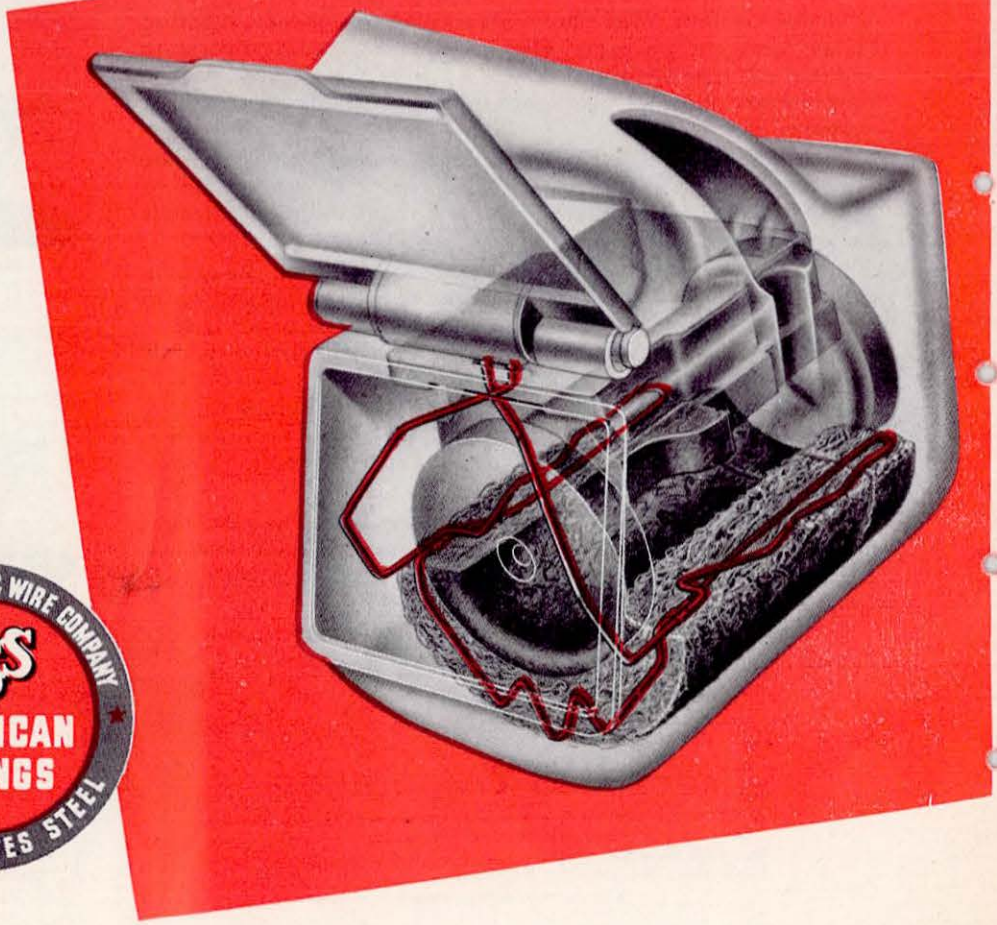
The Case of the



Made of finest, oil-tempered, steel spring wire. Specified range of Rockwell C46-48.

Annealed in special furnaces to relieve stresses set up in manufacturing.

Easy to install . . . easy to remove. No changes required in standard journal box assembly.



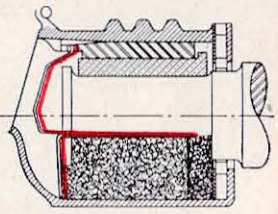
AMERICAN STEEL & WIRE COMPANY
USS
AMERICAN SPRINGS
UNITED STATES STEEL

Used in This Product

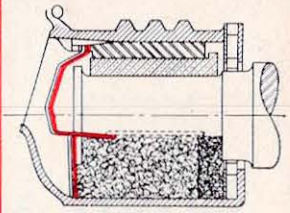
Overdue Freight!

Costly Train Delays Now Reduced with the Improved

HOLD-RITE Packing Retainer



View of "Standard" style Hold-Rite Retainer with fingers reaching full length of journal.



View of "Short" style Hold-Rite Retainer with stub fingers reaching from journal collar to cast-in retainer rib.

● HOT BOXES stop railroad traffic and cause serious financial loss. *Improved* Hold-Rite Packing Retainer design has resulted in large savings to many railroads because of fewer train delays due to hot boxes and less time spent in servicing.

Hold-Rite Retainers help prevent costly hot boxes by eliminating rolling of packing, holding down loose ends and reducing waste grabs. Hold-Rite Retainers lower maintenance costs by reducing servicing of packing to a minimum. Once the packing is in and the retainer applied, the packing will not loosen up or shift position . . . for positive, better lubrication from journal collar to fillet. Inquire about the many advantages of the Hold-Rite Packing Retainer! Full information on request.

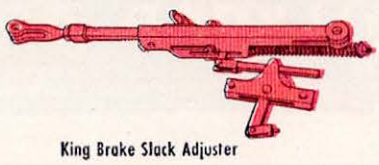
For 29 Years *the Standard*

SPRING PACKING CORPORATION

122 SOUTH MICHIGAN AVENUE • CHICAGO 3, ILLINOIS

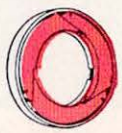
OTHER SPRING PACKING PRODUCTS

Spring Packing

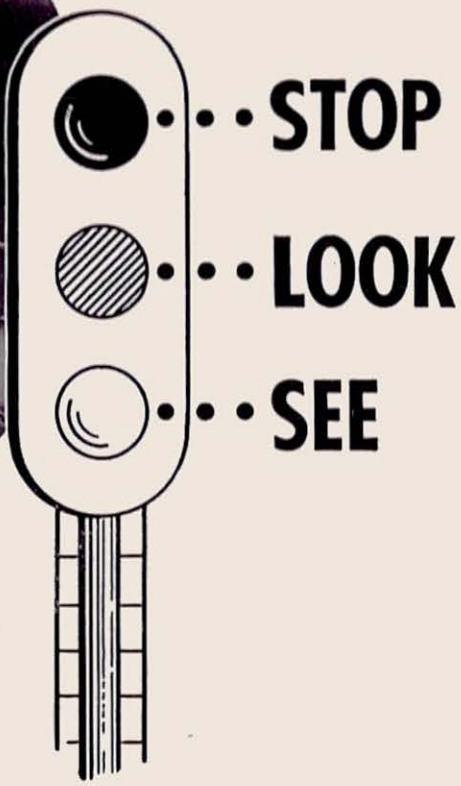


King Brake Slack Adjuster

Plastic Armor



Everseal Piston Rod Packing



Signal glassware, like all optical glassware made Corning, is by subject to constant control and improvement.

What you get with Corning Signalware!

THE cumulative benefits of Corning research in *all* fields of optics.

THE cumulative benefits of Corning research in *all* fields of illumination.

THE cumulative benefits of Corning research in *all* fields of technical glass production.

This combination of experience and facilities gives you the best signalware available at any time!

Safety depends on signal glassware—Railroads can depend on Corning.

CORNING means research in GLASS

T.M. REG. PYREX U.S. PAT. OFF.

CORNING GLASS WORKS • CORNING, N. Y.

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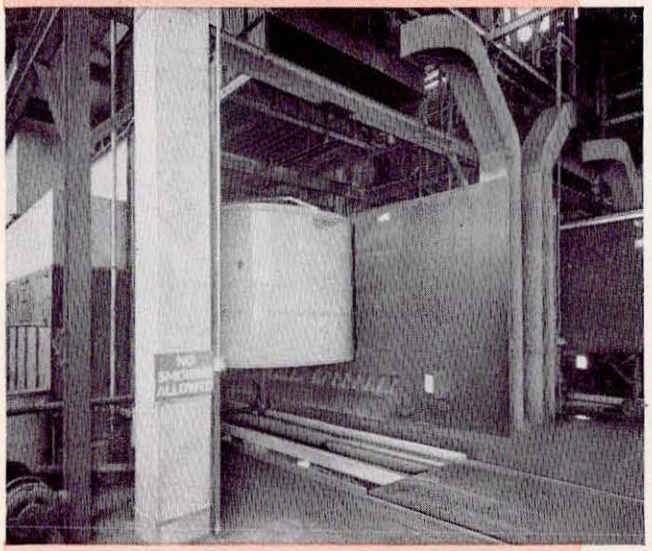
RAILROAD GLASSWARE

TECHNICAL PRODUCTS DIVISION: SIGNALWARE • LABORATORY GLASSWARE • GLASS PIPE • GAUGE GLASSES • LIGHTINGWARE • OPTICAL GLASS • GLASS COMPONENTS

COMPLETE *Finishing* SYSTEMS

for ENAMEL • LACQUER • PAINT

Mahon Hydro-Filter Spray Booths in two finishing production lines. These booths, part of a Complete Finishing System installed at the Fruehauf Trailer Company's plant, Avon Lake, Ohio—are specially designed for painting Van Bodies of assembled Truck-Trailers.



More Mahon Hydro-Filter Spray Booths in the same installation—these spray booths are specially designed for applying finish coat to underside of Van Bodies and Chassis.

. . a Capital Investment in Cost-Lowering Operating Efficiency!

You don't buy a finishing system every day . . . the capital outlay for such equipment will be reflected in your finishing costs and the sales curve of your product over a period of years. Your first concern in selecting finishing equipment should be performance . . . the operating efficiency of equipment of this type, which must be planned, engineered and produced to do YOUR particular finishing job, will be in direct proportion to the ability and the experience of the engineers entrusted with the job. Initial cost, therefore, is of secondary importance . . . your primary consideration is operating efficiency and cost per unit processed in every day operation. You cannot afford to place the responsibility for equipment which so directly affects the saleability of your product in the hands of other than those best qualified. Mahon engineers have pioneered development in this highly specialized field for twenty-eight years . . . their experience, which is world-wide in scope and covers virtually every industry where finishing is a major production operation, has endowed them with a wealth of technical knowledge and practical know-how not available to you elsewhere. See Sweet's Mech. Ind. File for complete information.

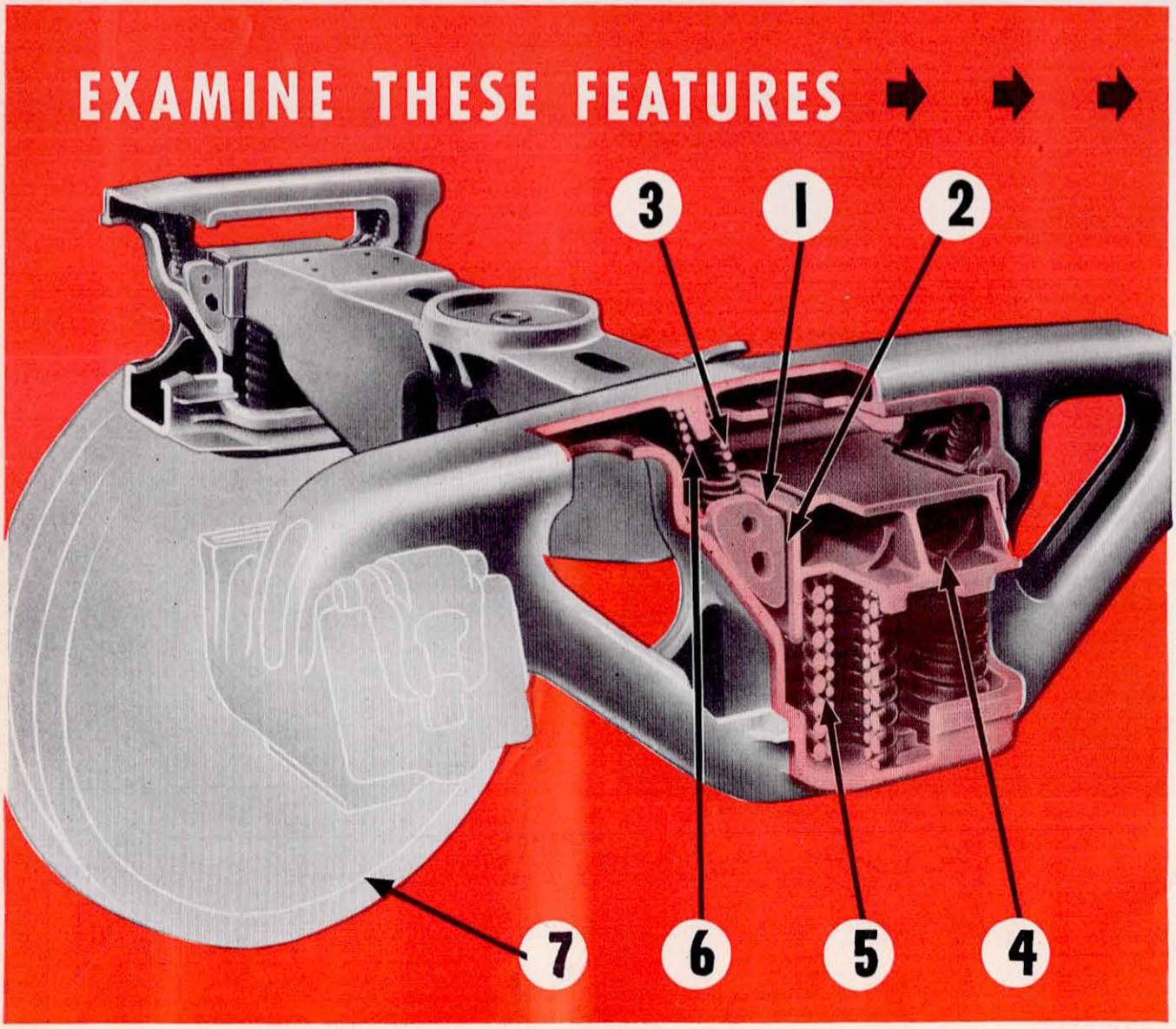
THE R. C. MAHON COMPANY

Home Office and plant, Detroit 11, Mich. • Western Sales Div., Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems—including Metal Cleaning and Rust Proofing Equipment, Dry-off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Systems, Drying and Baking Ovens, and Paint Reclamation Units. Also, Core Ovens, Hydro-Foam Dust Collectors, and many other Units of Special Production Equipment.

MAHON

NATIONAL 1



the "lading-conscious" truck

After two years of extensive tests, NATIONAL C-1 TRUCKS are now in volume production. Rigid workouts have fully proved the built-in values of this NATIONAL "lading-conscious" truck. With simple, flexible design and few but sturdy parts, the NATIONAL C-1 TRUCK offers maximum protection to lading and equipment.

1. Simple friction mechanism in the side frame controls lateral and vertical motion by maintaining correct pressure upon the bolster at all times.

2. Extra-large bearing surfaces between the friction wedge and the side frame and between the friction wedge and bolster reduce wear to a minimum. Bolster is protected by a hardened wear plate.

3. Location of friction unit in side frame permits use of low-stressed wedge springs. Thus, wear on the friction surfaces does not appreciably reduce wedge spring pressure.

4. Bolster has a full box section from end to end, made possible by housing the friction mechanism in the side frame. The design facilitates maximum strength in construction and permits use of lower vertical bolster end sections, so that springs may have a maximum deflection up to four inches.

5. Greater flexibility in design provides for long-travel, load-carrying springs which permit deflections of $2\frac{1}{2}$", $3\frac{1}{16}$", $3\frac{11}{16}$" or 4".

6. Quick, easy inspection of friction unit mechanism without handling or removing a single part.

7. Long-proved NATIONAL quick wheel-change.

For maximum protection and safety to lading and equipment at all speeds, inspect the "lading-conscious" NATIONAL C-1 TRUCK.

NATIONAL MALLEABLE AND STEEL CASTINGS COMPANY

Cleveland, Ohio

NATIONAL Products FOR TRANSPORTATION AND INDUSTRY

Est. 1868

From a *gentle* shake to a

SHAKE

THE EASTERN VERSATILE CAR SHAKER

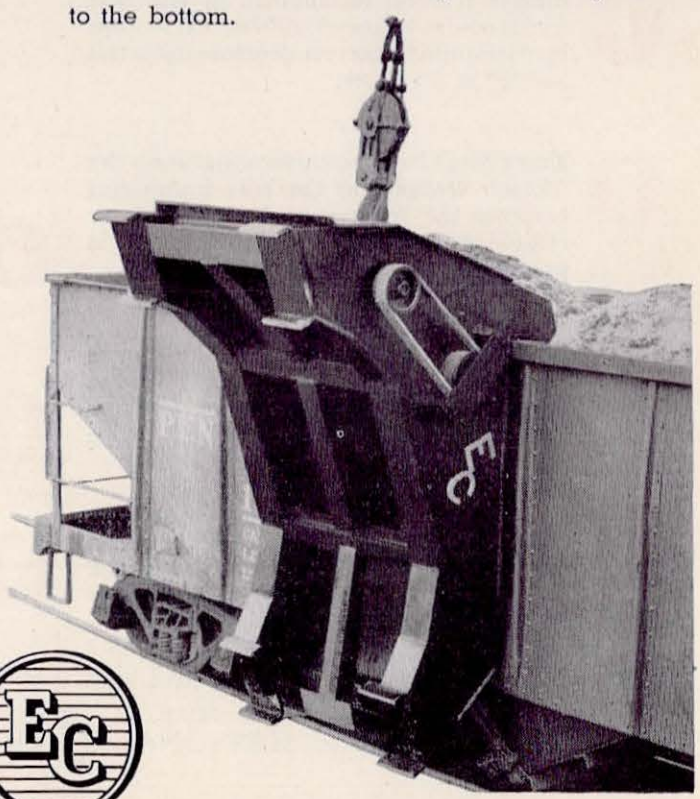
designed to eliminate unnecessary machine wear

• Intensity of shake can be controlled instantly with the new Eastern Car Shaker wheel control.

Now adjustments can be made easily—as the car is unloading. This means the Eastern Car Shaker operates efficiently and lasts much longer, because machine wear from unnecessary shaking is eliminated.

By simply turning the wheel you can use the gentle shaking action for unloading free-flowing materials or the gigantic, pulsating vibrations for dislodging more stubborn materials. Match the intensity of the shake to the job. Match them on the job!

For tightly compacted materials, the Eastern Car Shaker operates most efficiently when it is attached to the side of the car, directing the shaking action to the bottom.



Designers, Builders, Erectors of
RAILWAY CAR ROTARY DUMPERS
MINE CAR ROTARY DUMPERS
CAR SHAKERS
Fabricators of SPECIAL WELDMENTS,
MINE STRUCTURES AND EQUIPMENT

Write today for further information

EASTERN CONSTRUCTORS, INC.

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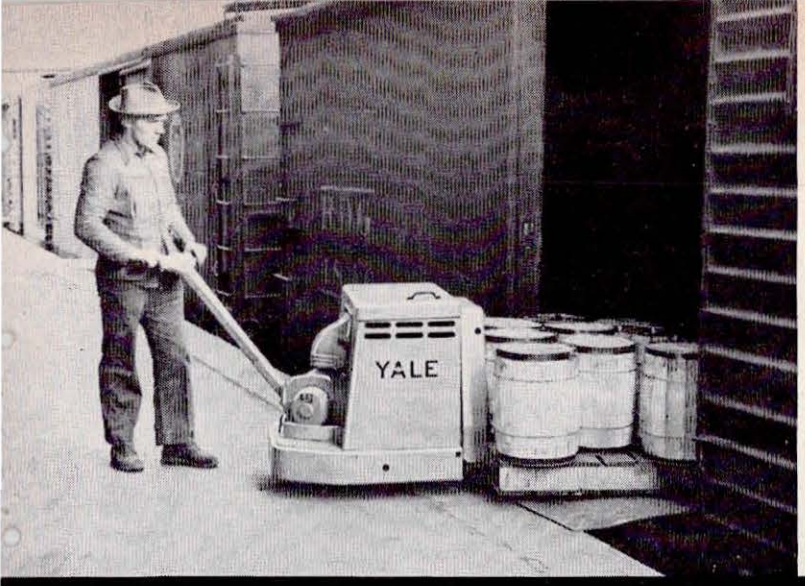
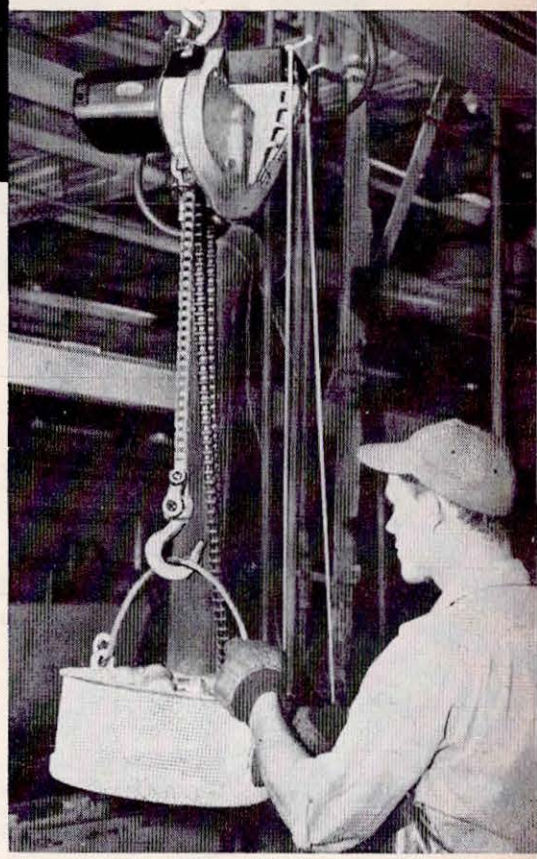


From Back Shop to Freight Station
YALE CUTS COSTS

How *little* it costs you to handle material depends on the efficiency of your methods and equipment. Yale Trucks, Hoists and Scales are serving and saving for a great many American railroads. Their efficiency and dependability are producing tremendous economies in material handling—the most fertile source of savings in all railroading operations.

With Yale Material Handling Machinery to speed production, maintenance, storage and freight movement, you eliminate *rehandling* delays that hike operating costs. You increase the productivity of workers. You save effort and create safer working conditions. You cut costs.

Yale railway representatives welcome the opportunity to work with you in selecting equipment of the best type and capacity for your needs. Phone or write the one nearest you or get in touch with headquarters.



THE YALE & TOWNE MANUFACTURING COMPANY
Department L-29 · Roosevelt Boulevard · Philadelphia 15, Pa.

YALE
TOOLS THAT KEEP INDUSTRY "ON THE MOVE"

RAILWAY REPRESENTATIVES:

CHICAGO 1, ILL.
The Earl E. Thulin Co.
Suite 339, Hotel Sherman

CLEVELAND 15, OHIO
C. E. Murphy
923 Midland Bldg.

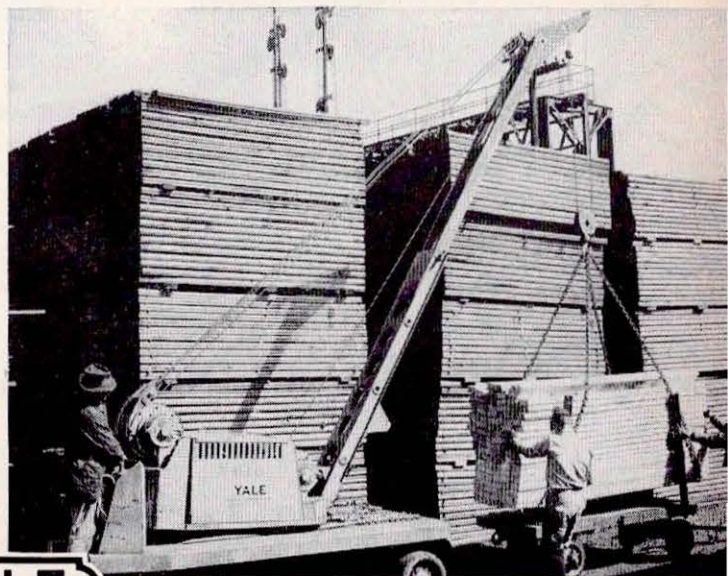
NEW YORK 17, N. Y.
Eastern Railway Supplies, Inc.
110 East 42nd Street

SAN FRANCISCO 5, CALIF.
Overland Supply Co.
55 New Montgomery St.

ST. LOUIS 1, MO.
Clarence Gush
Railway Exchange Bldg.

ST. PAUL 4, MINN.
Robert J. Wylie
2300 University Ave.

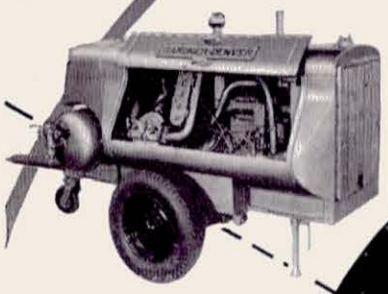
WASHINGTON 5, D. C. Ralph W. Payne, Metropolitan Bank Bldg.



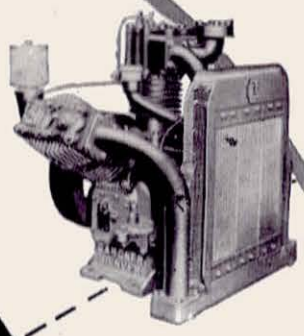
TRADE YALE MARK

MATERIAL HANDLING MACHINERY · *hoists . . . hand and electric* · *trucks . . . hand lift and power* · *industrial dial scale*

Quality Construction in a Small Compressor . . . Gardner-Denver Air-Cooled, Tank-Mounted Compressor Outfit.



Air Power Where You Need It — When You Need It . . . Gardner-Denver WH-105 Portable Compressor.



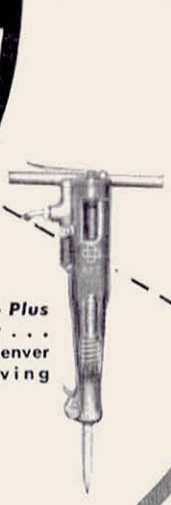
Compact—Smooth-Running . . . Gardner-Denver WX Air-Cooled Compressor.

choose GARDNER-DENVER *Quality*

and help your crews do more work — faster

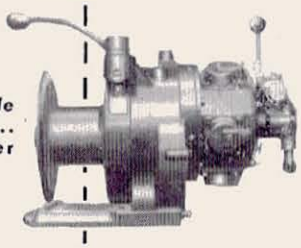
When you have to do the same job with fewer man-hours, it's a relief to know the tools your workmen use will help speed the work — will stay on the job till it's done. That's the assurance you have when you insist on Gardner-Denver *quality-built* compressors and air tools. Write us now for complete information.

Efficient and Dependable Pumping . . . Gardner-Denver VP4 Pneumatic Sump Pump.



Power — Plus Safety . . . Gardner-Denver B87 Paving Breaker.

Rugged — and Easy to Hold . . . Gardner-Denver T23 Backfill Tamper.



Smooth, Flexible Hoisting Power . . . Gardner-Denver HB Air Hoist.

Easy digging . . . Gardner-Denver Model 28 Clay Digger.

Positive Protection . . . Gardner-Denver L012 Line Oiler.

GARDNER-DENVER Since 1859

Gardner-Denver Company, Quincy, Illinois

In Canada: Gardner-Denver Company (Canada) Ltd., Toronto, Canada

NEW K. C. S.

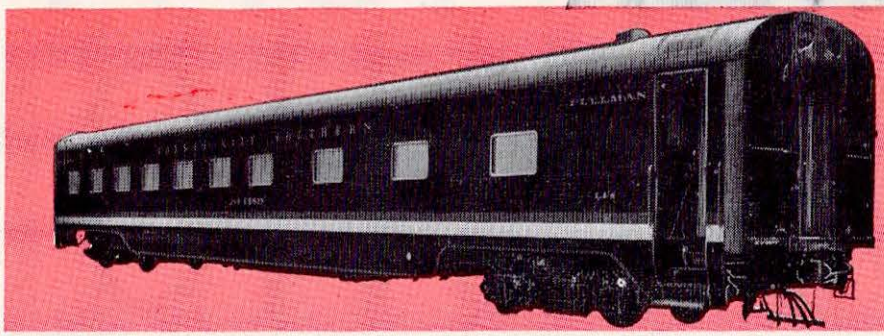
"Southern Belles"

MAKE DEBUT

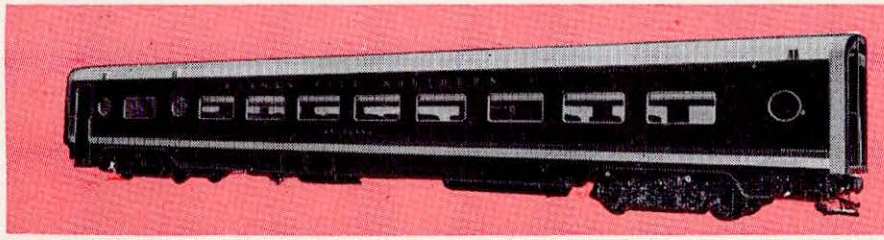
. . . they're Alcoa Aluminum inside and out!

Carrying the Kansas City Southern Lines' tradition of fast, luxurious travel a step further, two new "Southern Belle" streamliners have just been placed in service. Superstructures of all passenger cars utilize light, durable Alcoa Aluminum Alloys for framing, interiors and exteriors. Weight saving averages more than 8,000 pounds per car!

For beauty, safety, and economy, plan your new equipment in Alcoa Aluminum. ALUMINUM COMPANY OF AMERICA, 2178 Gulf Building, Pittsburgh 19, Pennsylvania. Sales offices in principal cities.



One of the new "Southern Belle" Pullman cars, built by Pullman-Standard Car Mfg. Co.



K. C. S. deluxe coach built by American Car & Foundry Co.

ALCOA FIRST IN **ALUMINUM**

ALCOA A C O A ALUMINUM ®

INGOT • SHEET & PLATE • SHAPES, ROLLED & EXTRUDED • WIRE • ROD • BAR • TUBING • PIPE • SAND, DIE & PERMANENT MOLD CASTINGS • FORGINGS • IMPACT EXTRUSIONS
ELECTRICAL CONDUCTORS • SCREW MACHINE PRODUCTS • FABRICATED PRODUCTS • FASTENERS • FOIL • ALUMINUM PIGMENTS • MAGNESIUM PRODUCTS

WESTINGHOUSE Friction Draft Gear • Certified A.A.R.

MAXIMUM PROTECTION

FOR CARS and LADING

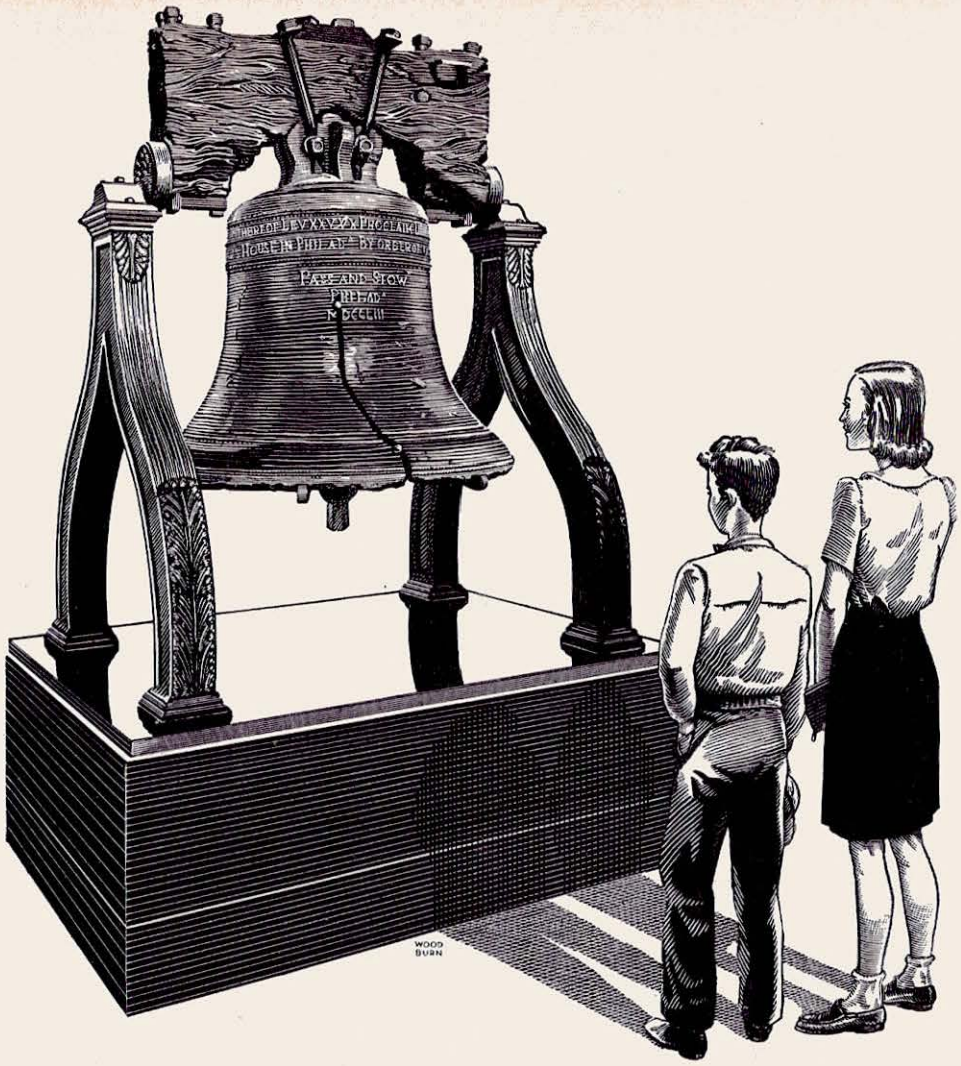
Back of the Products of this Company is over 40 years' experience designing, developing and improving Friction Draft Gears and Friction Bolster Springs.

CARDWELL Friction Bolster Spring for A.A.R. and Long-Travel Springs

Over 98% of the cars in freight carrying service are A.A.R. construction and over 96% have Friction Draft Gears.

Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal

2620 R



What price liberty?

IT was Daniel Webster who said, "God grants liberty only to those who love it and are always ready to guard and defend it."

Today in our yearning for "security", we are inclined to forget about that "liberty" for which this old bell rang out. The two are not synonymous. When we permit a benevolent government to assume more and more responsibility for housing, feeding, hospitalizing, and even entertaining our citizens, we must in return expect to surrender more and more of our personal rights and liberties.

Actually, the only security any man can enjoy with liberty is the security he earns through his own initiative, resourcefulness and productivity. As community leaders, it is our responsibility to help our fellow citizens realize that for the delusion of government-guaranteed security they are sacrificing liberty.

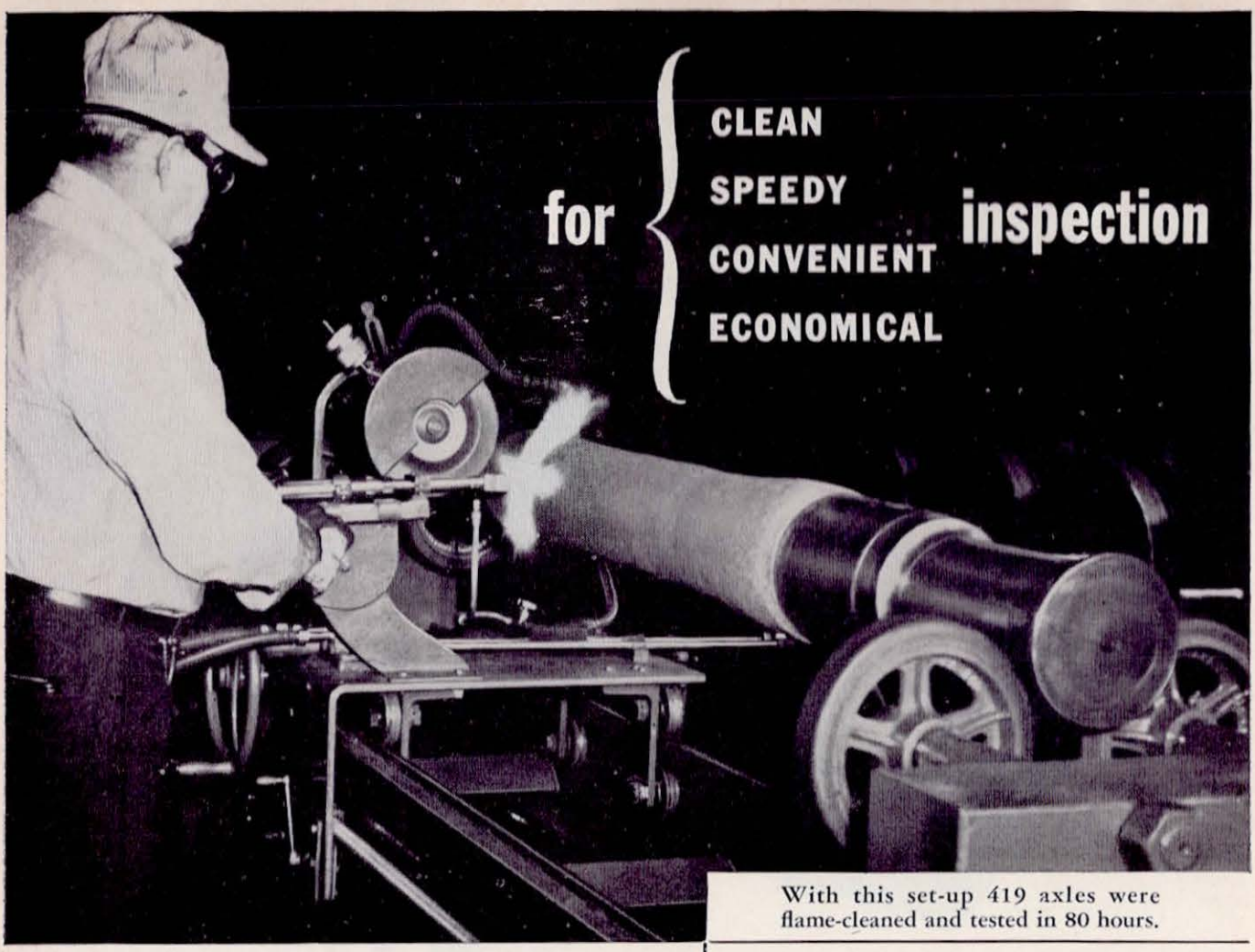
The Youngstown Sheet and Tube Company

General Offices -- Youngstown 1, Ohio

Export Offices--500 Fifth Avenue, New York

MANUFACTURERS OF CARBON, ALLOY AND YOLOY STEELS

ELECTROLYTIC TIN PLATE - COKE TIN PLATE - WIRE - COLD FINISHED CARBON AND ALLOY BARS - PIPE AND TUBULAR PRODUCTS - CONDUIT - RODS - SHEETS - PLATES - BARS - RAILROAD TRACK SPIKES.



With this set-up 419 axles were flame-cleaned and tested in 80 hours.

use Flame-Cleaning
on Car Axles

Flame-cleaning followed by wire-brushing fully removes all scale, rust, oxides, oil, grease, cement, paint, or white lead from car axles.

This gives you a clean axle surface that makes for reliable results in the magnetic particle tests required under A. A. R. interchange rules.

OXWELD can help you plan flame-cleaning procedures and mechanisms to make the operation practically automatic. Write for further information.

✓✓ **Double check these important advantages of flame-cleaning.**

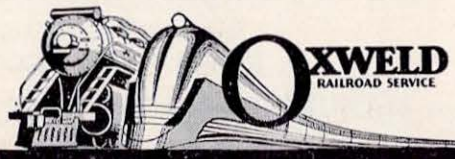
Clean Removes surface impurities without corrosive baths or rinses.

Speedy Less than five minutes required to flame-clean and wire-brush one axle.

Convenient Cleaning, wire-brushing, and testing done at one location with a minimum of axle-handling.

Economical Flame-cleaning reduces cost of materials and manpower.

THE OXWELD RAILROAD SERVICE COMPANY
Unit of Union Carbide and Carbon Corporation
UCC
Carbide and Carbon Building Chicago and New York
In Canada:
Canadian Railroad Service Company, Limited, Toronto

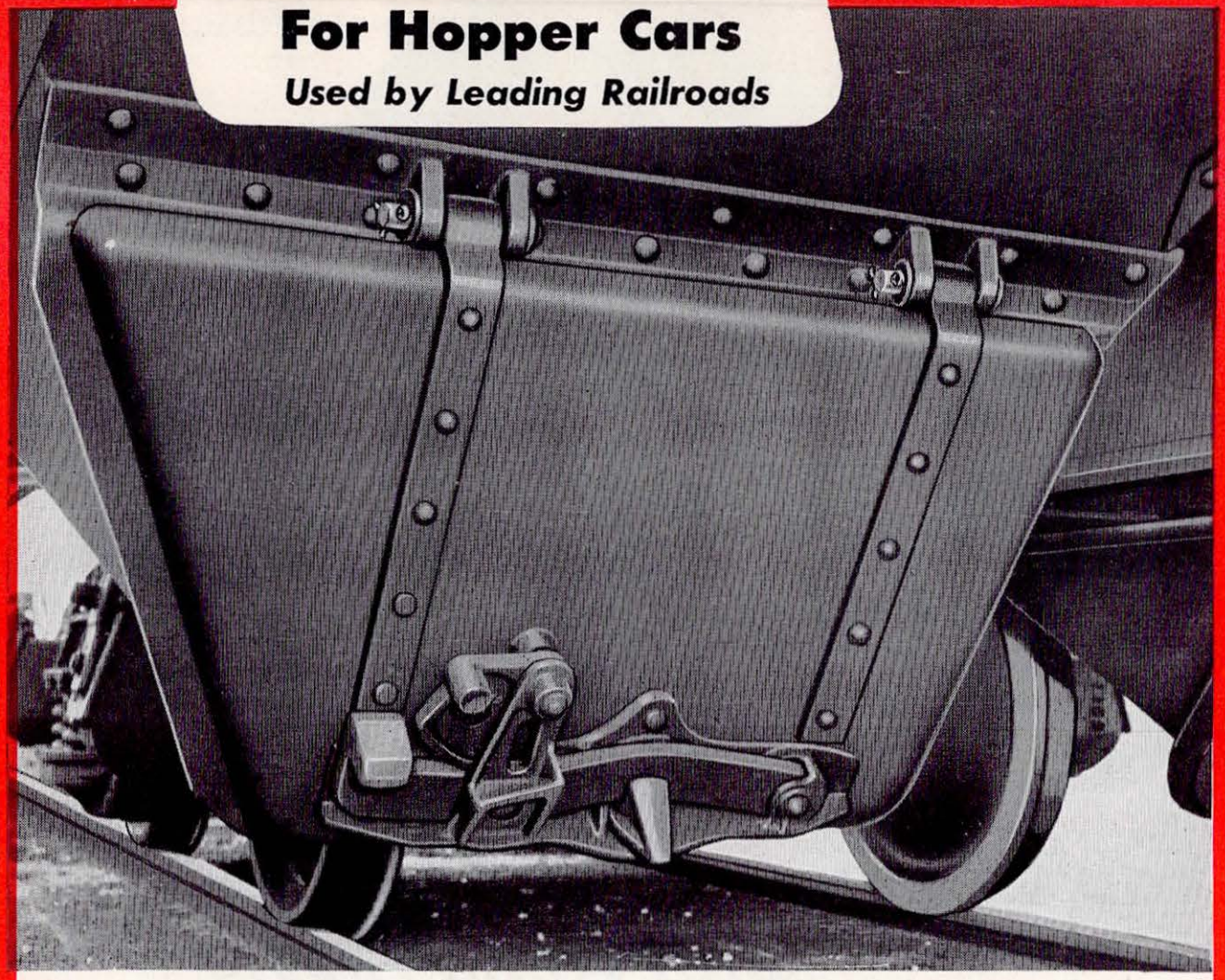


SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

ENTERPRISE UNIT DOOR LATCH

For Hopper Cars

Used by Leading Railroads

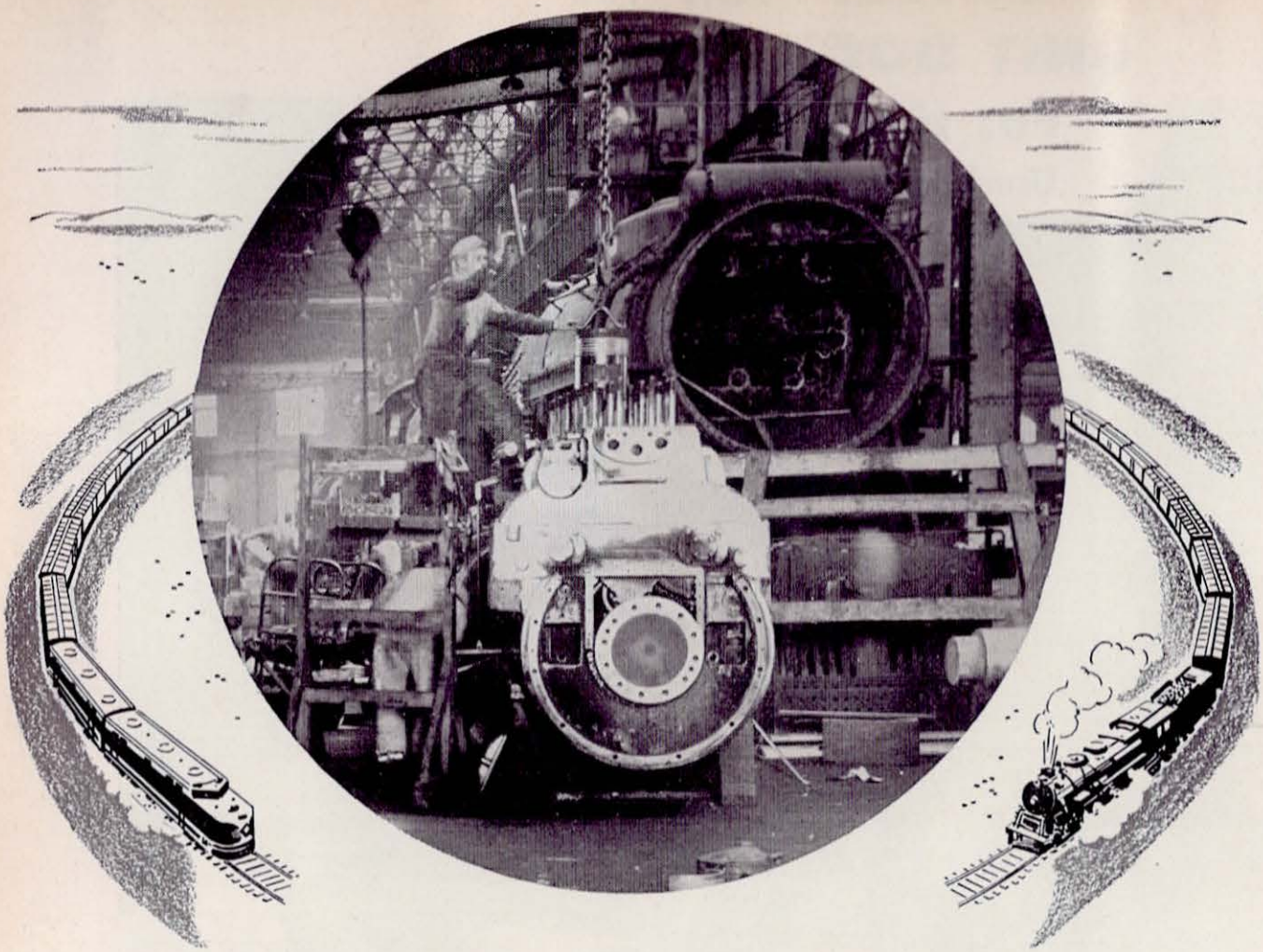


50,000 Hopper Cars Now Equipped with ENTERPRISE Unit Door Latches

ENTERPRISE Welcomes to Chicago Members of the Mechanical Division and Purchases and Stores Division of the A. A. R. for their 23rd Annual Meeting, June 27-29, 1949

ENTERPRISE RAILWAY EQUIPMENT COMPANY

59 East Van Buren Street • Chicago 5, Illinois



YOU'LL SAVE IN THE END

. . . with Alloy Steels

Contrary to what you may have heard, alloy steels are not expensive to use—actually, THEY COST LESS IN THE LONG RUN.

That's because of their high strength and toughness—and the hard, wear-resisting surfaces that they produce when properly heat-treated.

Thus . . . they are able to stand up longer . . . both in Diesel and steam service . . . to keep equipment on the road where it produces revenue day after day . . . to keep repair and replacement costs down to welcome low levels.

Republic—world's leading producer of alloy steels—is well qualified to tell you just what these fine steels can do for you—performance-wise and cost-wise. Just name the date on which you'd like a metallurgist to call.

REPUBLIC STEEL CORPORATION

Alloy Steel Division • Massillon, Ohio

GENERAL OFFICES • CLEVELAND 1, OHIO

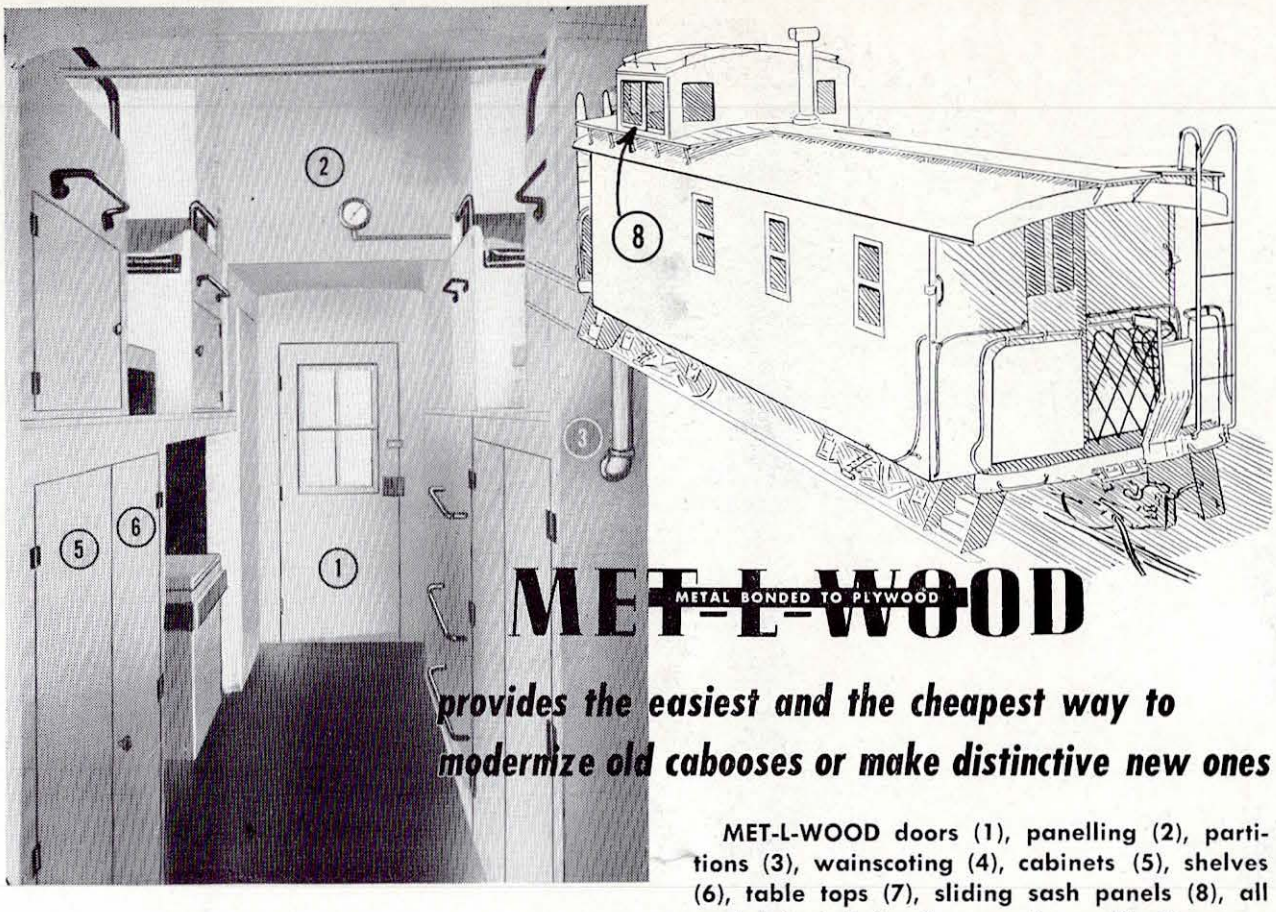
Export Department: Chrysler Building, New York 17, New York

Alloy steels have proved their money-saving ability in side and main rods, crank pins, engine bolts, staybolts and other parts of steam locomotives—and in gears, studs, connecting rods, wrist pins, crankshafts, camshafts, valves, springs and bearings in Diesel engines. Write us for further details.

Republic ALLOY STEELS

REPUBLIC STEEL

Other Republic Products include Stainless, High Strength and Carbon Steels—Sheets—Plates—Pipe—Bolts, Nuts and Rivets—Boiler Tubes

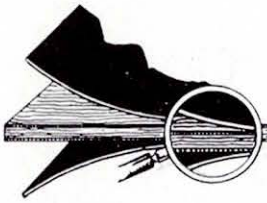


MET-L-WOOD

METAL BONDED TO PLYWOOD

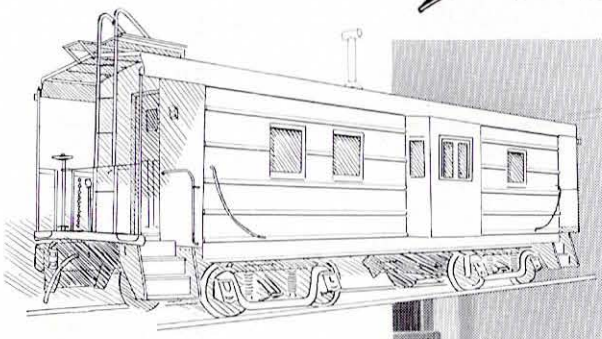
provides the easiest and the cheapest way to modernize old cabooses or make distinctive new ones

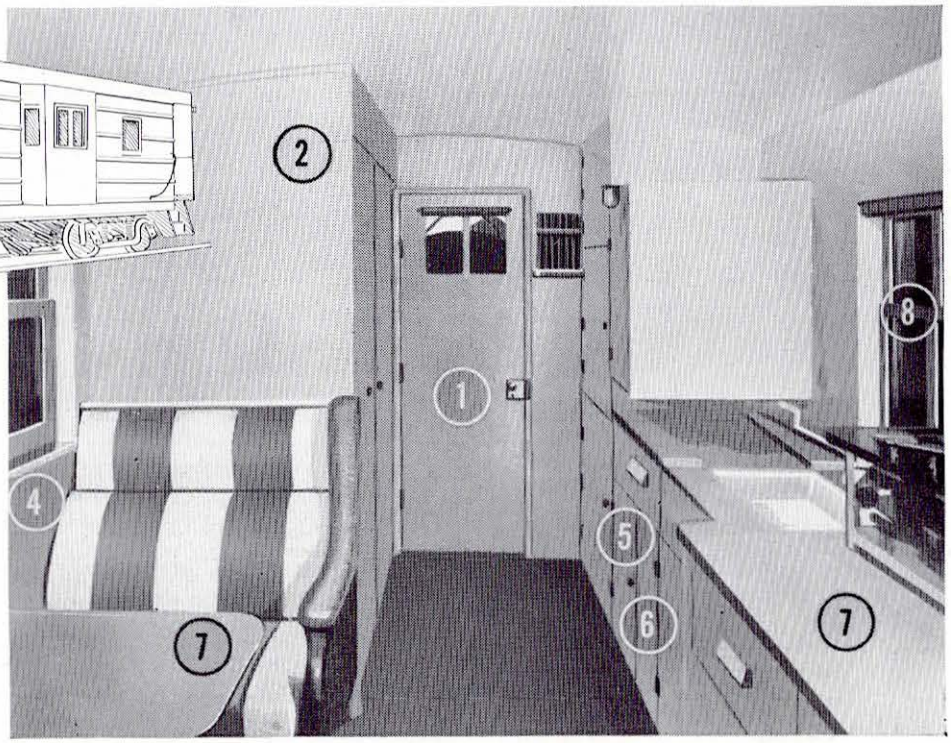
MET-L-WOOD doors (1), panelling (2), partitions (3), wainscoting (4), cabinets (5), shelves (6), table tops (7), sliding sash panels (8), all prefabricated to the exact specifications required, are quickly and easily installed for lasting safety, durability, attractiveness, and important saving of weight in service.



MET-L-WOOD CORPORATION

6755 West 65th Street, Chicago 38, Illinois





Our engineering staff will gladly help you resolve your caboose problems with the use of MET-L-WOOD.

A Fleet of 104 New Passenger Cars for UNION PACIFIC, C&NW and WABASH

Built by ACF

Features Commonwealth - - -

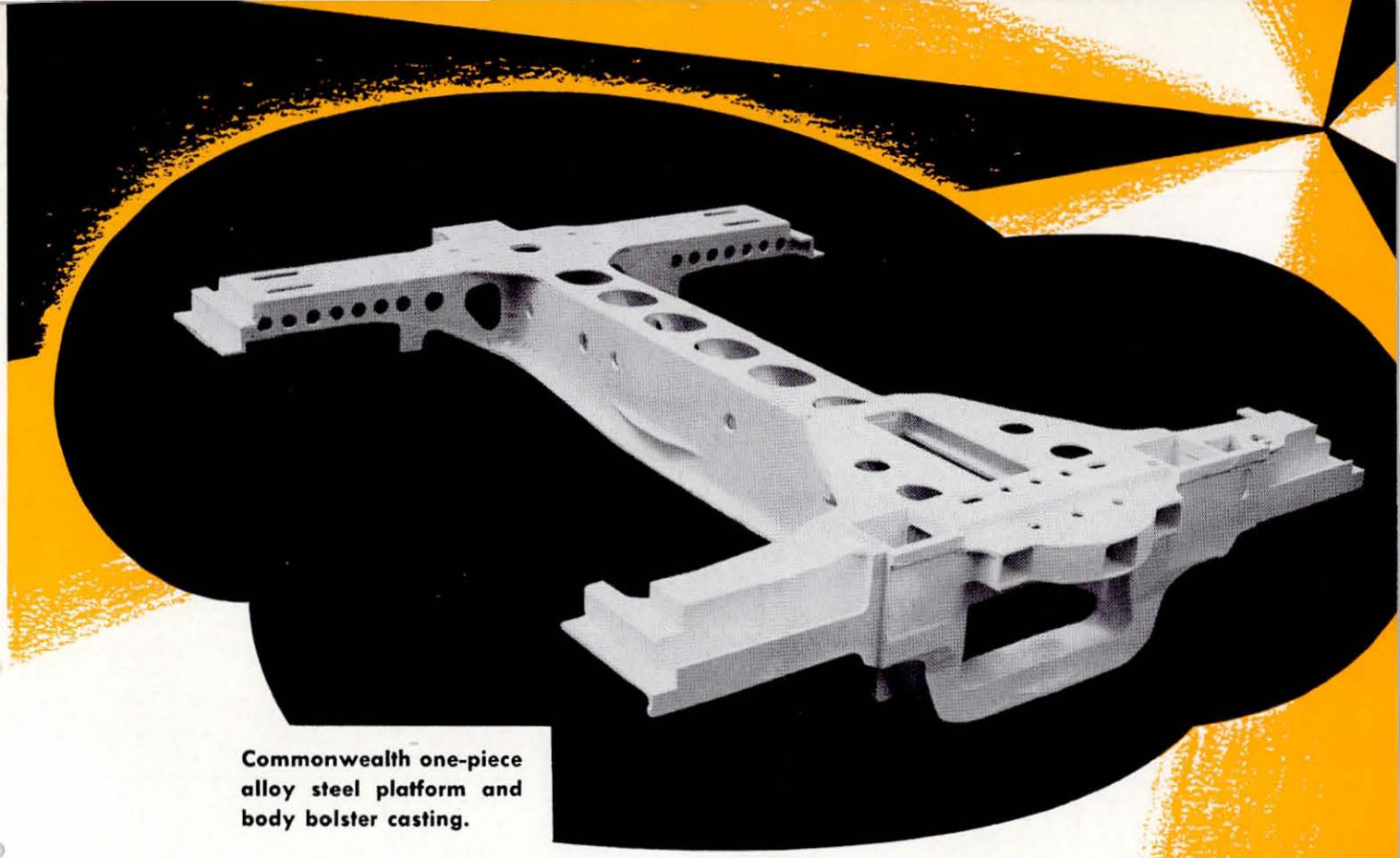
CAST STEEL PLATFORMS with INTEGRAL BODY BOLSTERS

Illustrated above is one of 27 Diners and Club-Dining Cars now building by ACF at the St. Charles plant, as part of a lot of 104 passenger cars of various types for joint operation by the Union Pacific, Chicago and North-western, and Wabash. All are equipped with COMMONWEALTH one-piece Platforms with integral Body Bolsters and COMMONWEALTH four-wheel Trucks.

Past experience with streamlined equipment has shown the need of extra strength for added protection. Greater strength in the underframe is provided by COMMONWEALTH Platform Castings. This design includes not only the platform center sills, buffer beam, and coupler carrier, but also integral body bolster, end sills, and draft gear pocket. An important part of the underframe structure, they are made of heat treated nickel alloy cast steel—possess high inherent strength and ruggedness to resist impact shocks—eliminate rivets or welds—reduce over-all maintenance costs.

GENERAL

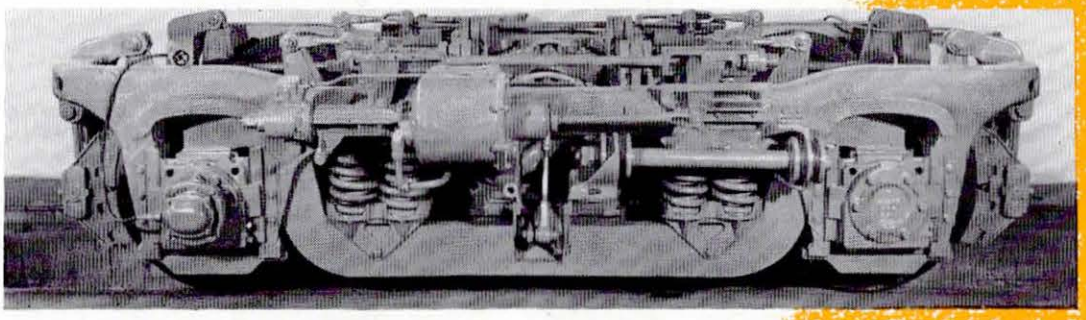
GRANITE CITY, ILL.



Commonwealth one-piece alloy steel platform and body bolster casting.

The **COMMONWEALTH** trucks on these cars are equipped with all-coil springing, bolster anchors, and roll stabilizers which provide positive control of car body roll. Smooth, comfortable riding is assured, with maximum serviceability and a minimum of maintenance expense.

For better, stronger passenger cars, specify
COMMONWEALTH *Cast Steel Platforms and Trucks.*



Commonwealth four-wheel passenger car truck.

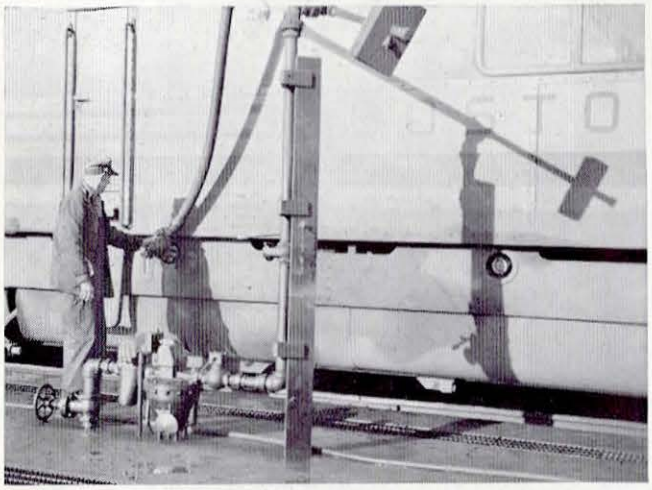
STEEL CASTINGS

EDDYSTONE, PA.

Bowser Systems Record Filtered Fuel And Lube Oil Deliveries

Bowser Ticket Printers On Bowser Meters Provide Accurate Unit Operating Cost Records

Most modern Diesel railroad service facilities provide dependable filtration to keep contaminants out of costly equipment and reliable metering for accurate records of fuel and lube oil disbursements. Bowser systems are engineered and built specifically for railroad service. The majority of America's leading roads specify Bowser for dependable service in cutting maintenance costs and improving service. Pictured here are examples of several Bowser meter and ticket printer installations which help maintain accurate operating cost records on Diesel units.



Fueling at Boston & Maine Diesel Terminal, Somerville, Mass. All-weather metering with Bowser Temperature Compensating Meter.

This Bowser temperature compensating meter at the Boston & Maine Somerville Terminal provides accurate readings of unit fuel deliveries in any weather. A complete line of Bowser meters in any capacity for railroad requirements is available from stock.

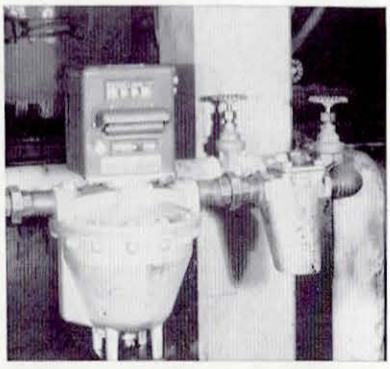
Bowser complete Diesel fueling systems serve most American railroads. Many have recently increased efficiency by the addition of "ticket printers" to existing meter installations. The increasing number of Diesel locomotives put in service makes it desirable to keep continuous fuel and lube oil delivery records for each unit. All Bowser Railroad Meters are designed for the addition of a ticket printer.

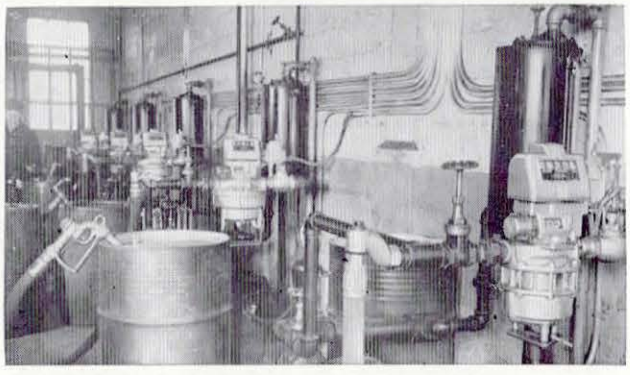
C. & N. W. Chicago Service Ramps. A complete Bowser system filters fuel to protect this superb Diesel equipment.

Hostler removes printed record of fuel delivery from ticket printer equipped Bowser meter at Seaboard Airline Railroad facilities, W. Jacksonville, Florida.

Complete Bowser Lube Oil Systems Include Printed Delivery-Record Metering.

A typical, efficient lube oil installation of a Bowser strainer, meter and ticket printer is located in Burlington's Diesel House at Clyde. Note the pit installation at working level. Every lube oil delivery is recorded on a printed slip for accounting on each Diesel unit.





Bowser barrel filling system at C. & N. W. Chicago barreling plant for railroad liquids.

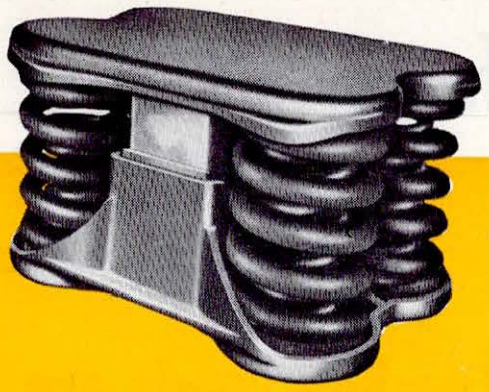
Write for Railroad Equipment Catalog

BOWSER, INC.

1321 Creighton Ave., Fort Wayne, Indiana

RAILROAD REPRESENTATIVES IN PRINCIPAL CITIES

HERE'S HOW TO MAKE YOUR OLD TRUCKS *Easy-Riding!*



OVER A THOUSAND A.R.T. REFRIGERATORS NOW HAVE THIS SOFTER, SMOOTHER RIDE

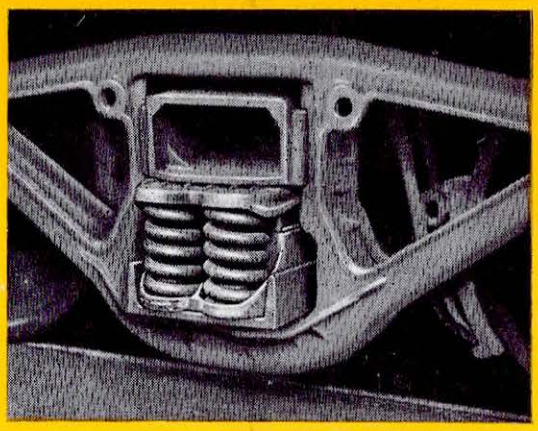
Just as rapidly as their general repair program permits, A.R.T. refrigerated cars from No. 17000 to No. 22818 are being equipped with A.S.F. Ride-Control Packages. First applications were made in May, 1948. More than 1000 cars with this soft, *cushioned movement* are already in A.R.T. service.

LOW-COST WAY TO MODERNIZE

Developed by Ride-Control Truck engineers, along basic Ride-Control principles, this convenient replacement for A.A.R. Springs is the *low-cost way* to modernize. Thousands of *road-owned* railroad cars, too, now have smooth-riding Ride-Control Packages. Their long spring travel under constant control *protects* roadbed, car, and contents.

PROVED PERFORMANCE

Trucks equipped with Ride-Control Packages rate among the *very best* in riding qualities—ask your A.S.F. Representative for the facts and comparative figures. If rough-riding freight cars are one of *your* problems, you should know about the Ride-Control Package.



A·S·F
Ride-Control
PACKAGE

AMERICAN STEEL FOUNDRIES

MINT MARK OF ◯ FINE CAST STEEL

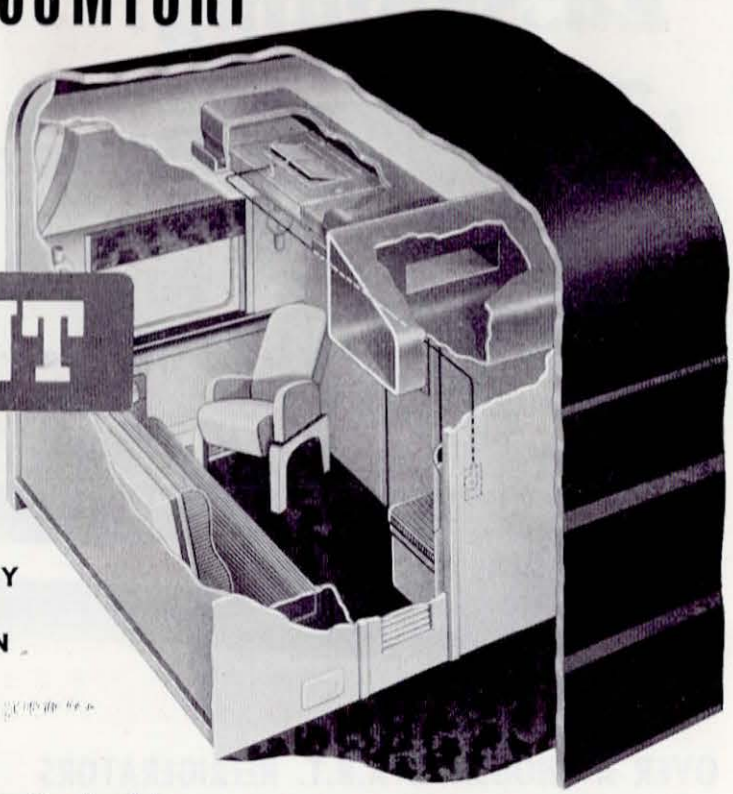
For *Complaint-free Air-conditioned* COMFORT

Leading roads are *specifying*

MULTI-VENT

T. M. Reg. U. S. Pat. Off. by the Pyle-National Co.

for Sleeping room cars



CHICAGO, BURLINGTON & QUINCY
CHICAGO & NORTH WESTERN
DELAWARE, LACKAWANNA & WESTERN
PENNSYLVANIA
UNION PACIFIC
WABASH

The above railroads have on order or have recently placed in service a large number of sleepers equipped with Multi-Vent Room-Master panels. The Canadian National and the Canadian Pacific are currently equipping their reconditioned sleepers with Multi-Vent Room-Master.

The Multi-Vent Room-Master panel, especially designed for delivery of conditioned air into sleeping rooms, large or small, combines the many well known advantages of the standard Multi-Vent panel (now in use on every major railroad) with individual remote air volume control. The room occupant is free to select, by the simple turning of a knob, any amount of air he desires from the minimum to the maximum predetermined valve settings. The unique construction of the Multi-Vent valve permits individual variation of air volume 50% or more without in any way affecting the desired air flow pattern. Thus the occupant can enjoy completely draftless air conditioning and perfectly uniform air motion and temperature with a wide choice of air volume delivered. There are no strong air streams, no cold spots and no stale air pockets. In fact, with Multi-Vent, the total elimination of perceptible air motion and the sound of rushing air plus absence of protruding outlets or grilles (which may interfere with lighting or detract from the beauty of a streamline interior), cause passengers to be entirely unaware of the mechanics of the air conditioning process . . . only aware of the result: *true* air conditioning comfort.

MULTI-VENT DIVISION

THE PYLE-NATIONAL COMPANY

1365 WEST 37TH STREET, CHICAGO 9, ILLINOIS

BRANCH OFFICES and AGENTS in the principal cities of the United States and Canada. EXPORT DEPARTMENT: International Railway Supply Company, 30 Church St., New York. CANADIAN AGENT: The Holden Company, Ltd., Montreal.

SINCE 1897

LOCOMOTIVE HEADLIGHTS • GYRALITES • TURBO-GENERATORS • FLOODLIGHTS • PLUGS AND RECEPTACLES

in its new radio cabooses...

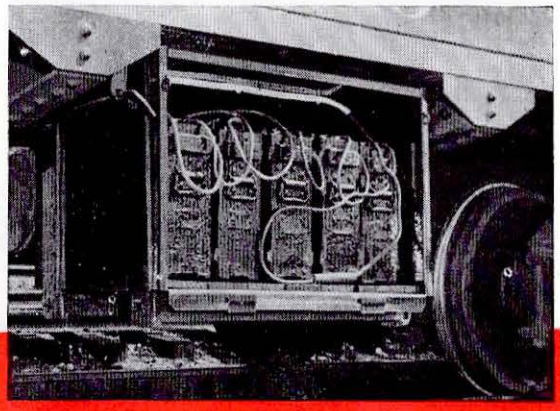
ERIE PROFITS FROM EXPERIENCE

As PART of an initial 347-mile installation of train radio communication between Marion, Ohio, and Salamanca, N. Y., the Erie Railroad has adopted axle-generators and EDISON Nickel-Iron-Alkaline Storage Batteries as power supply on 15 radio cabooses. This system was chosen largely because of its proven dependability and economy in carlighting service on passenger-train cars due, in no small part, to the long, trouble-free life of the nickel-iron-alkaline battery.

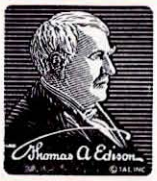
Experience has shown that this battery successfully withstands the overcharging and overdischarging inherent in such service and that its high-strength steel cell construction resists mechanical abuse, a consideration far more important on caboose cars than on passenger-train cars.

The initial installation of train radio communication follows more than a year of experimentation and is proving so successful in improving safety and efficiency of train operation that it is now being extended an additional 537 miles east from Salamanca to Jersey City. For this purpose, 20 more cabooses are being equipped with generator-battery power. The present program of train radio communication will thus cover about 85 per cent of the Erie's entire Chicago-New York main line — the largest installation of its kind in railroad operation.

LONG LIFE MEANS LOW COST!



The batteries consist of 25 cells each of A6H retired from carlighting service; most of them are 22 to 25 years old; some a few years older. If you do not use Edison batteries, get price quotations from us; you may find prices lower than you think; cost per year less than you pay now.



EDISON

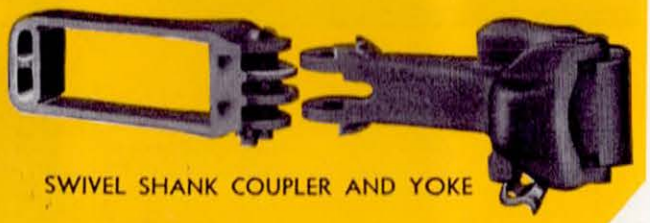
Nickel · Iron · Alkaline

STORAGE BATTERIES

BUCKEYE

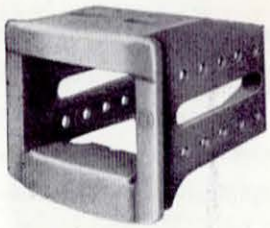
STEEL CASTINGS FOR RAILWAY EQUIPMENT

RIGID SHANK COUPLER AND YOKE

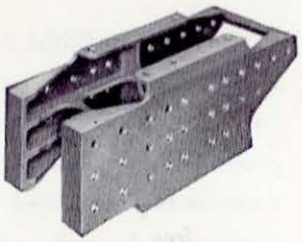


SWIVEL SHANK COUPLER AND YOKE

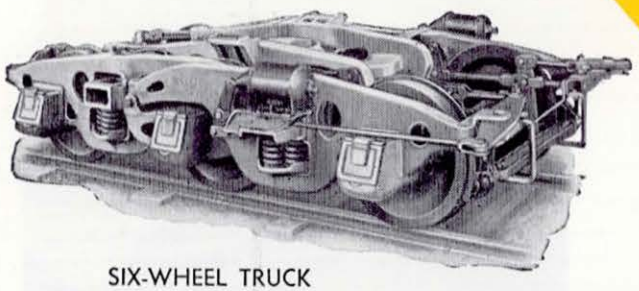
TYPE "H" TIGHTLOCK COUPLER
AND ATTACHMENTS



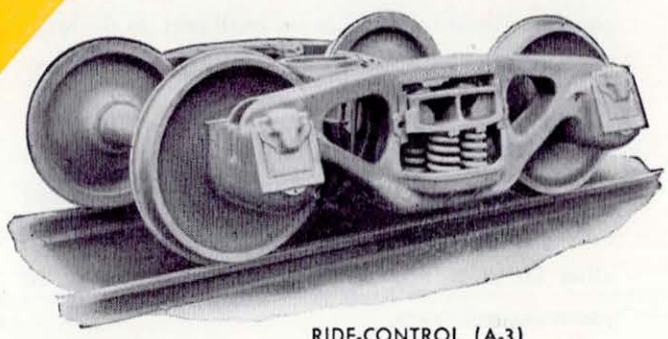
STRIKING CASTING



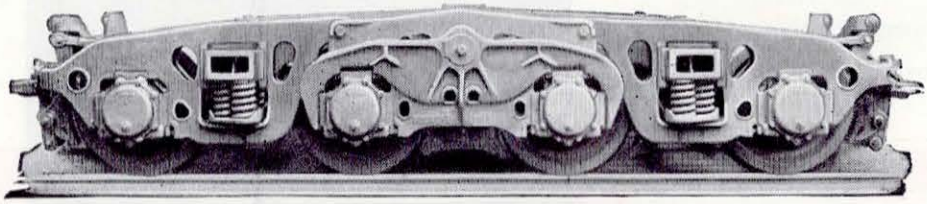
BOLSTER CENTER FILLER



SIX-WHEEL TRUCK



RIDE-CONTROL (A-3)
FREIGHT CAR TRUCK



EIGHT-WHEEL TRUCK

B

THE BUCKEYE STEEL CASTINGS COMPANY

New York, N. Y. Columbus, Ohio Chicago, Ill.

BACK AGAIN— and Better than Ever!

DAYTON'S "RED" RAILWAY V-BELTS

for Under-Car Drives

NEW! Model BF-4

Dayton Red 2-inch Railway V-Belt, Connector Type. The new compounds in Patented Cog* construction for high-speed, severe service. Available in all sizes. *®

NEW! Model BC-5

Dayton Red Standard 1-inch Railway V-Belt, Connector Type. Improved and refined compounds give it remarkably longer belt life. Available in all sizes.

New Refined Compounds for Longer Wear . . . Higher Resistance to Temperature Extremes

They're in production now! The famous prewar Red Dayton V-Belt, hailed by railway men as the finest V-Belt made! And they are better than ever! New compounds, new fabrics, born and refined through wartime research, give them even longer belt life, cut maintenance sharply, perform at rated capacity, regardless of temperature extremes.

In actual use, these new belts have already far surpassed all previous mileage records. And in extensive field tests they have outperformed other make belts as high as two to one.

Equip your under-car drives with them now. Get the dependable, trouble-free performance so vital today to passenger comfort. All sizes are available, for both passenger cars and diners. See your nearby Dayton Railway Engineer, or write *Dayton Rubber, Railway Division, Dayton 1, Ohio.*

LOOK FOR THE DAYTON "RED" V-BELT

The distinctive red color of these V-Belts is the result of special compounds used to give amazing resistance to temperature extremes. It is also your guarantee of new mileage performance. Specify and demand Dayton "RED" Railway V-Belts, for more belt miles at less cost.

There's a Dayton V-Belt Drive for every need • Stocks in Dayton, New York, Chicago and Los Angeles

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

Gets Heavier Tonnage Trains Over the Road *Faster—Safely*

"AB" BRAKE

THE reliable New York "AB" Brake with its sensitive calibration for better slack control permits heavier train loads with more car miles per day. And that means faster train schedules, smooth and reliable retardation, protection to lading and equipment—all factors pointing the way to more profitable operation.

In the light of present conditions with respect to wages, taxes and high operating costs, the complete standardization with this modern high speed "AB" Brake is an essential to proper transportation service by railways. As a result motive power and freight cars as well as all other facilities and staff become more productive. The general all-around improvement in operating efficiency results in one of the simplest and most direct means for increasing immediately net operating revenue.

The New York Air Brake Company

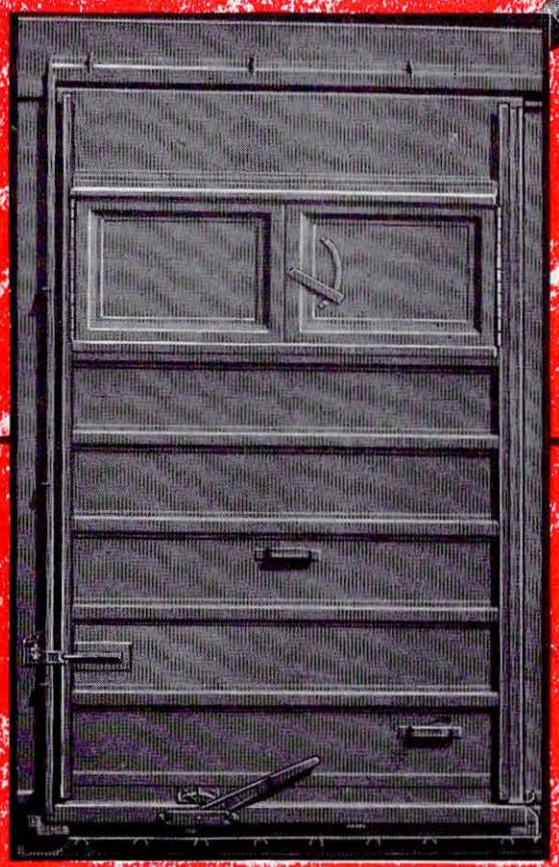
420 Lexington Ave., New York 17, N.Y. Plant: Watertown, N.Y.

International Steel

Presents—

An old name in steel now combines its precision manufacturing facilities with the 50-year experience of one of the most respected names in Railroad Car Building to produce the . . .

. . . NYSTROM SIDE DOOR



Patented and Patents Pending

. . . designed for fast, inexpensive application to A.A.R. Standard Box and Automobile Cars; *more accurately aligned* and built to closer tolerances than have ever before been specified.

The new, positive interlocking top and bottom safety feature completely solves a serious and long-standing problem by eliminating loss of doors, injuries and damage. *The* NYSTROM SIDE DOOR *is designed to* enlist, *rather than combat, internal pressure for sealing, which (with the addition of the hinged upper section as shown at the right) facilitates grain loading and inspection as well as ensuring a grain-tight door without the expensive use of wood or steel-reinforced paper grain doors.*

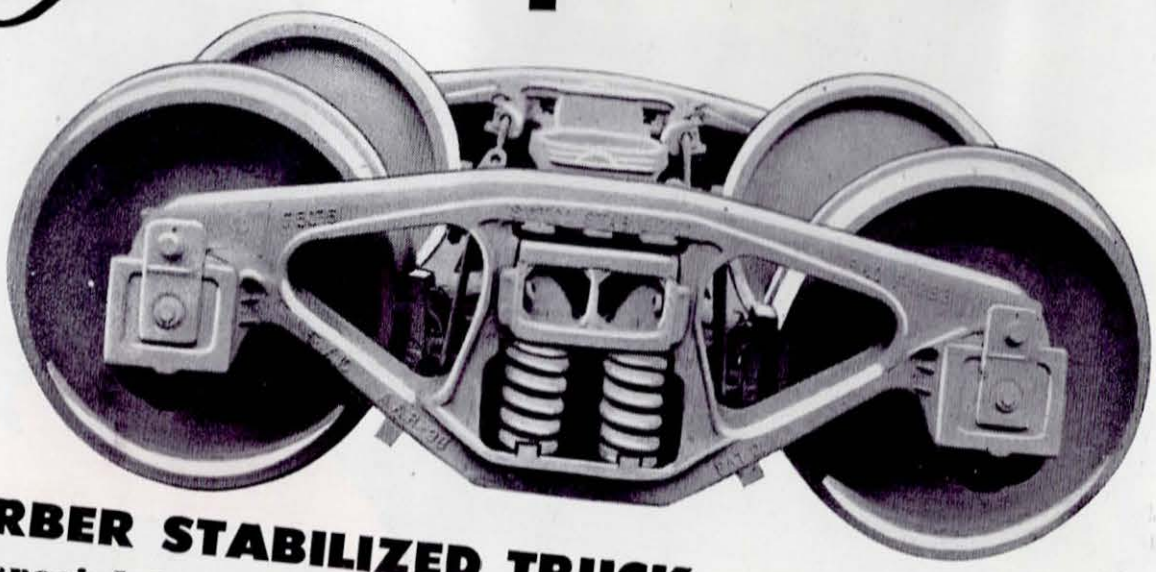
Prompt delivery, packaged in multiple units for faster, easier handling . . . less fitting in shops . . . very speedily installed . . . 1500 sets now in use on one of America's leading Class I Roads.

Other Railway Products: Railroad Car Sides and Underframes. Brine Tanks, Stainless steel Floors, Racks and Bracing Panels for Refrigerator Cars.

INTERNATIONAL STEEL CO. RAILWAY DIVISION

Evansville 7, Indiana

Sure it's a **Special** truck!



the BARBER STABILIZED TRUCK

***. . . is so special** that over 210,000 Car Sets have been ordered!*

The Stabilized Parts Consist of the Large, Sturdy, Positive Friction Elements Illustrated below.
1
2
3
1 Special Alloy-Iron friction casting having 35 square inches of friction-bearing surface.
2 Spring-steel wear plate securely bolted or welded to the column.
3 Friction-casting-supporting side-spring having a minimum 3/4" initial compression.

but . . .

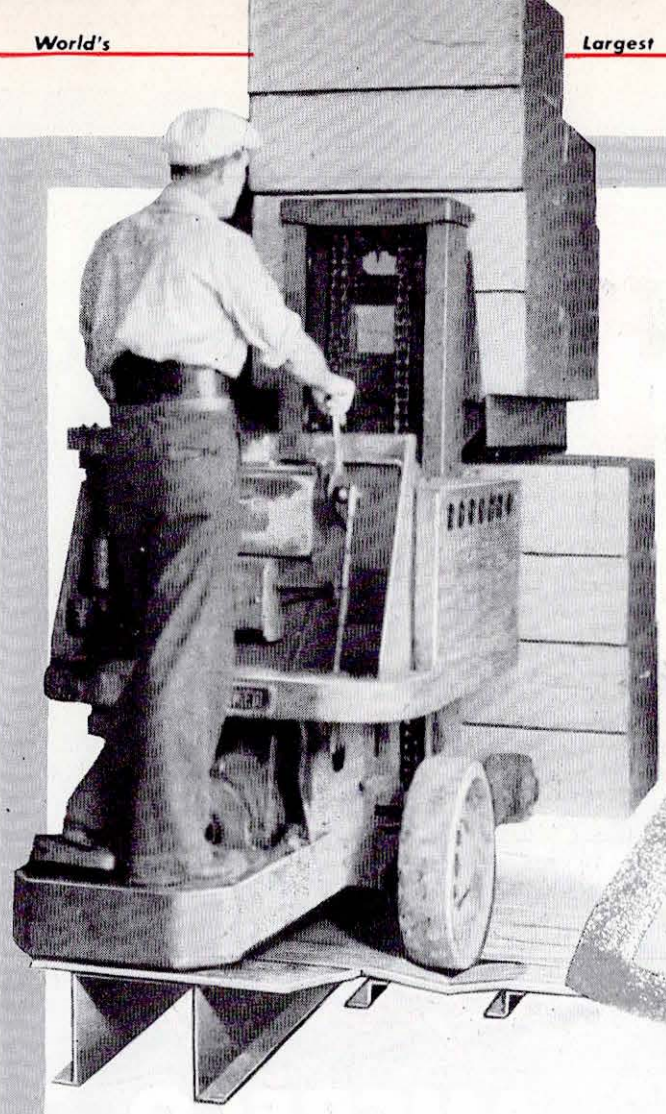
A. A. R. Bolster and Side Frame Dimensions are retained in the Barber Stabilized Truck, for interchangeability.

And it's easy to dismantle because Barber Stabilizer Parts are freed when the Bolster is raised off the Springs!

So there's *nothing to lose* and *everything to gain* when you specify *Barber* Stabilized Trucks!

STANDARD CAR TRUCK COMPANY
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

3101R



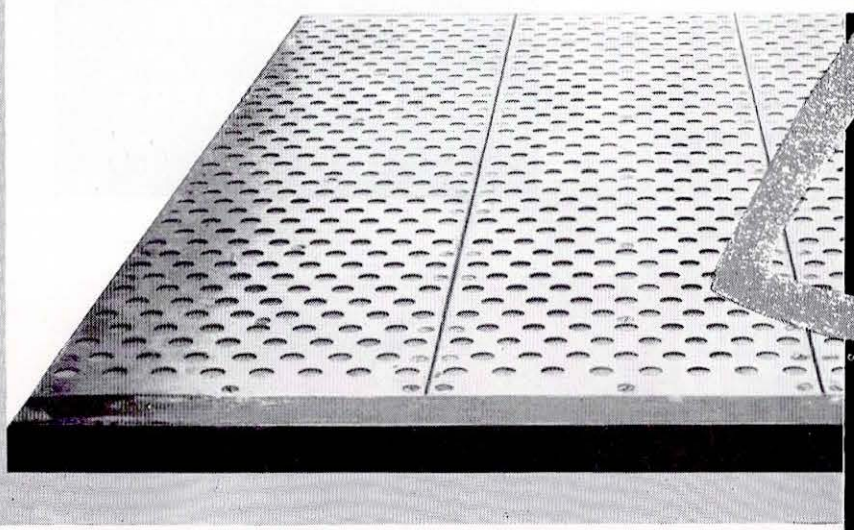
THIS

Floor board cannot be expected to support the *dynamic* concentrated loads of todays heavy lift trucks!

Standard

RAILWAY EQUIPMENT MANUFACTURING COMPANY

310 South Michigan Avenue, Chicago 4 · 247 Park Avenue, New York 17



THIS Standard

All Metal Floor Protector is designed to combine the resilience of wood with the strength of steel to support *abnormal dynamic concentrated loads!*

- Standard Floor Protectors provide the advantages of steel without disturbing normal blocking procedure! (Perforations also provide safe, non-skid surface.)
- More than 75,000 applications.
- After *12 years*, wood floors are still *new!*
- *Low* application cost—for new cars or existing equipment.

Specify AMCRECO

Lowry Process

CREOSOTED TIES

•

ADZED AND BORED CROSS TIES

BRIDGE TIES

PILES • TIMBERS

● You can keep more ties on the roadbed *longer* when they are protected by Amcreco's improved Lowry Process pressure-creosoting treatment. The longer life expectancy of Amcreco products, proved by actual service records, cuts maintenance costs to the minimum . . . expedites traffic by reducing slowdowns for maintenance crews.

Let Amcreco engineers help you increase profits through maintenance savings. Write for further information.

AMERICAN CREOSOTING COMPANY
INCORPORATED

COLONIAL CREOSOTING COMPANY INCORPORATED

AMCRECO LOWRY PROCESS CREOSOTED WOOD

GEORGIA CREOSOTING COMPANY INCORPORATED

LOUISVILLE, KENTUCKY

Pressure-treated for strength that lasts!

Destination Comfort

wherever today's streamliners go
passengers enjoy the luxury of
VAPOR RADOR CONTROLS WITH ELECTRONIC CIRCUIT

America's newest, most successful trains utilize the superior performance of modern RADOR controls to provide unsurpassed comfort for every passenger throughout the trip. The Vapor developed combination of Rador Thermostats and 'Lectronic Control panel maintains truly comfortable temperature, in every car zone without the attention of train crew or passengers.

Rador Thermostats "search" the air—take into consideration changing conditions: sun and shade, cold or warmth, many or few passengers. This automatic, continuous, *anticipatory* action modulates heating, cooling or ventilating—and establishes "Living Room Comfort" in each car.

Rador is another in the long line of Vapor contributions to modern train travel. Vapor engineers are ready to work with you in the specification of Rador controls for your cars.

Vapor RADOR 'LECTRONIC
MODULATES
TEMPERATURES ALWAYS AT THE CONTROL POINT

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New York • St. Paul • Cleveland • St. Louis • Denver • Washington • Philadelphia • San Francisco • Jacksonville, Fla. • Winnipeg • Montreal

Illustration prepared with the cooperation of Elliott Co.

New Gas Turbine Power Plant . . .

Red hot gas spins the plates of this new turbine, produced by the Elliott Company to power new Main Line Locomotives.

Here again, in the gas turbine as in Diesels and steam engines, Correct Lubrication by Socony-Vacuum has played a part in the development.

See those main bearings for the compressor end (left) and the turbine end (right). A special Gargoyle Oil will stand up under this service, protect the bearings, help assure continuous reliable operation.

For leading railroads everywhere, Socony-Vacuum provides the same kind of advanced lubrication thinking. In Diesels, steam engines, maintenance-of-way equipment, proved Gargoyle lubricants are backed by 83 years' experience, the greatest in the petroleum industry.

Socony-Vacuum

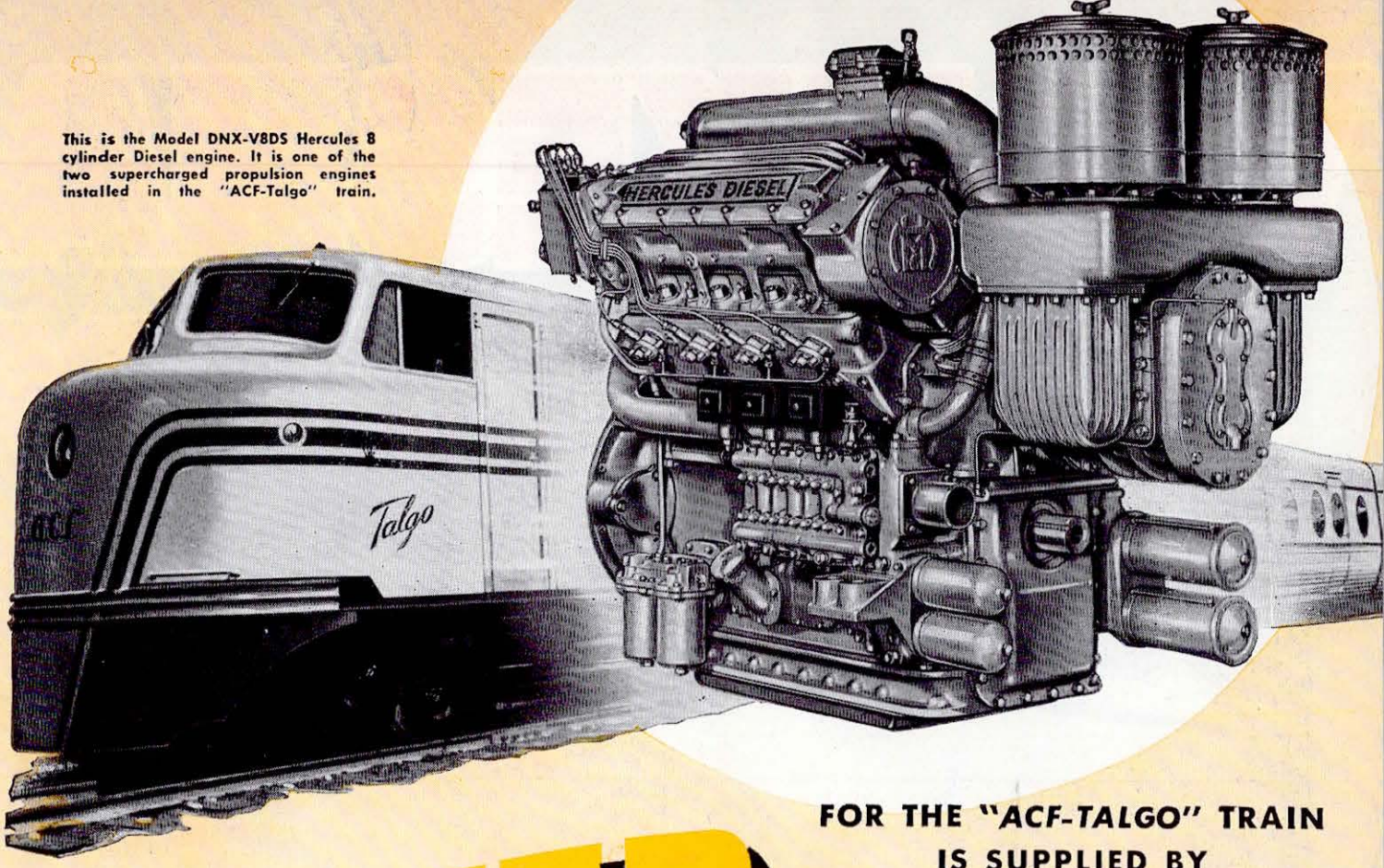
Railroad Lubricants

SOCONY-VACUUM

GARGOYLE

Railroad Lubricants

SOCONY-VACUUM OIL CO., INC., and Affiliates:
MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.

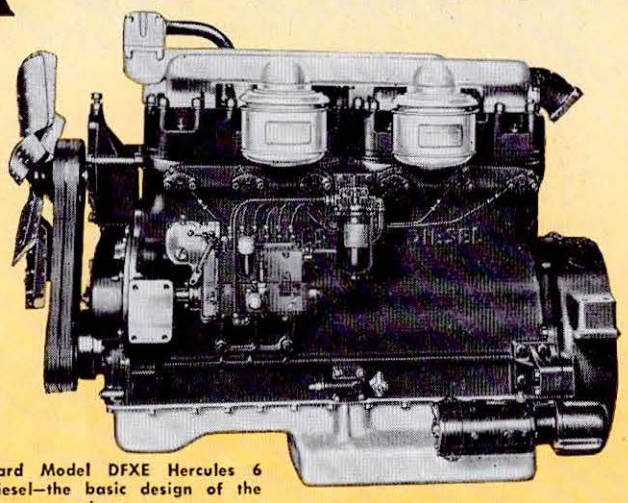


This is the Model DNX-V8DS Hercules 8 cylinder Diesel engine. It is one of the two supercharged propulsion engines installed in the "ACF-Talgo" train.

FOR THE "ACF-TALGO" TRAIN
IS SUPPLIED BY

POWER

HERCULES DIESEL ENGINES



The standard Model DFXE Hercules 6 cylinder Diesel—the basic design of the auxiliary power engines.

Two high speed, heavy duty Hercules Model DNX-V8DS eight cylinder supercharged Diesel engines of 1468 cubic inch displacement provide the power for operating the "ACF-Talgo" train. Each of these two engines are coupled directly to a propulsion generator which operates at a maximum of 400 horsepower at 1800 R.P.M. This speed is unusual for main line Diesel locomotives. Weight has also been reduced materially since the Hercules Model DNX-V8DS only weighs 13.6 lbs. per horsepower delivered to the generator.

Two Hercules Model DFXE six cylinder Diesel engines of 895 cubic inch displacement supply the auxiliary power for light, heat and air conditioning as well as operate the brake system. Each engine drives a 100 KW alternator at a speed of 1500 R.P.M.

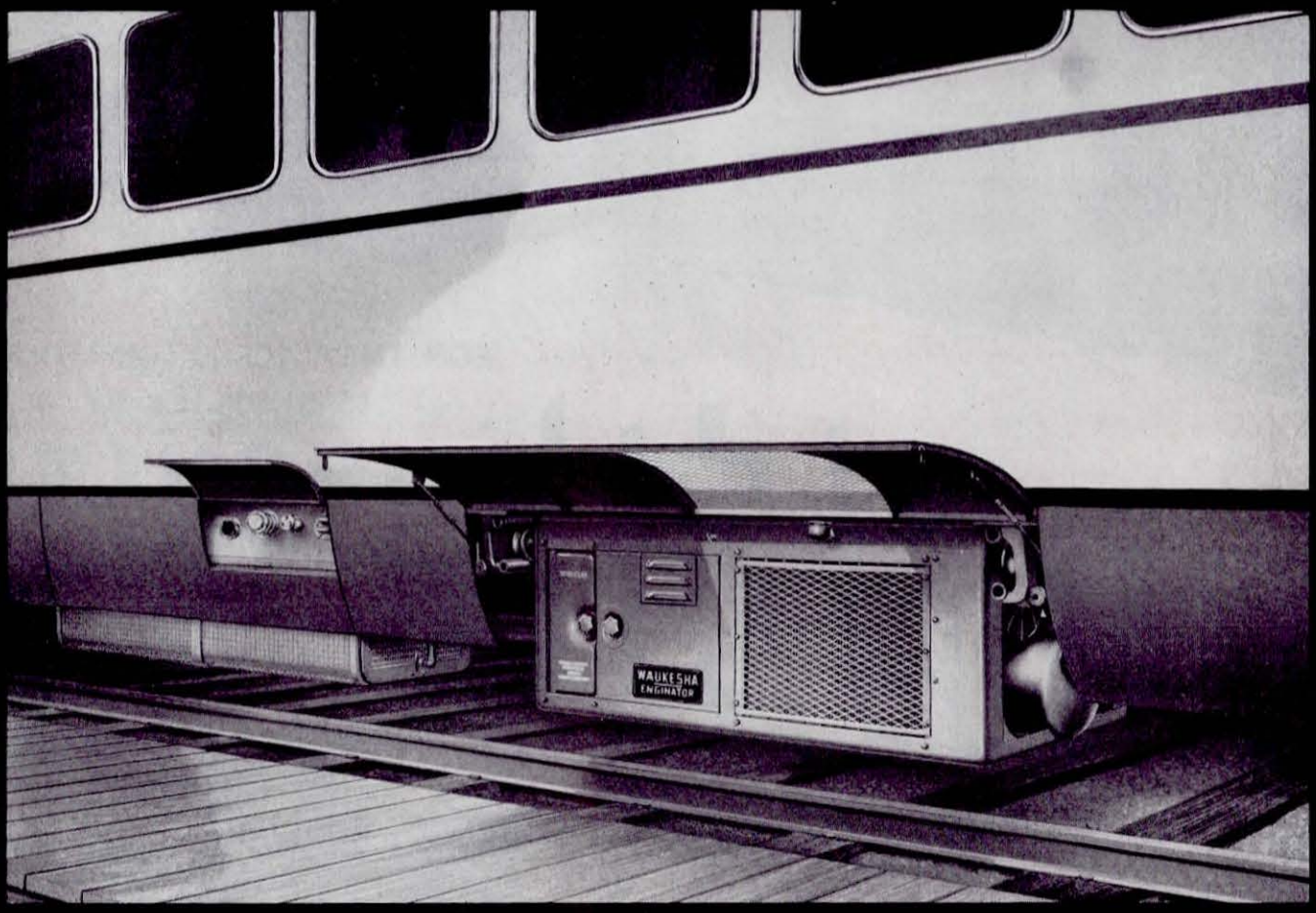
The fast, smooth operation and dependable performance of these Hercules Diesel engines have been well established in the test runs made by the revolutionary "ACF-Talgo" train.

HERCULES MOTORS CORPORATION

CANTON, OHIO, U. S. A.

WAUKESHA

Diesel ENGINATORS



for RAILWAY PASSENGER CARS

Diesel engine-driven Generators of 25 KW capacity for DC or AC systems

BULLETIN No. 1496

RAILWAY DIVISION

WAUKESHA MOTOR COMPANY, WAUKESHA, WIS.

Largest Builders of mobile, engine-driven Refrigeration and Generator Equipment

For pleasant, relaxing music...

...for train-wide announcing

Use Western Electric equipment

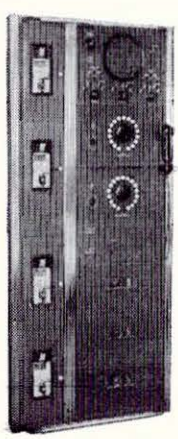
Give your passengers the extra enjoyment of music-while-they-ride...give *both* passengers and train crews the added convenience of train-wide announcements. Install a Western Electric Program Distribution System!

Music? The Western Electric 100 Type System provides four sources of program material—two dual magnetic reproducer units, two radio receivers. Programs from any three of these are distributed throughout the train. Attendants in public spaces select a program from the three available ...passengers in private rooms make their own choice.

Announcements? They're carried to the entire train (or a part of it, if desired) from a handset telephone located at the control center. Auxiliary handsets can be placed in other parts of the train. Music is cut off automatically while announcements are being made.

A smaller system—the Western Electric RD109—provides train-wide distribution of one program selected from three input sources: radio receiver, reproducer, and either a mike or telephone handset.

For the full story on Western Electric Railroad Program Distribution Systems, call your nearest Graybar Representative. Or write Graybar Electric Company, 420 Lexington Avenue, New York 17, N. Y.



The Western Electric 100 Type Program Distribution System

—QUALITY COUNTS—

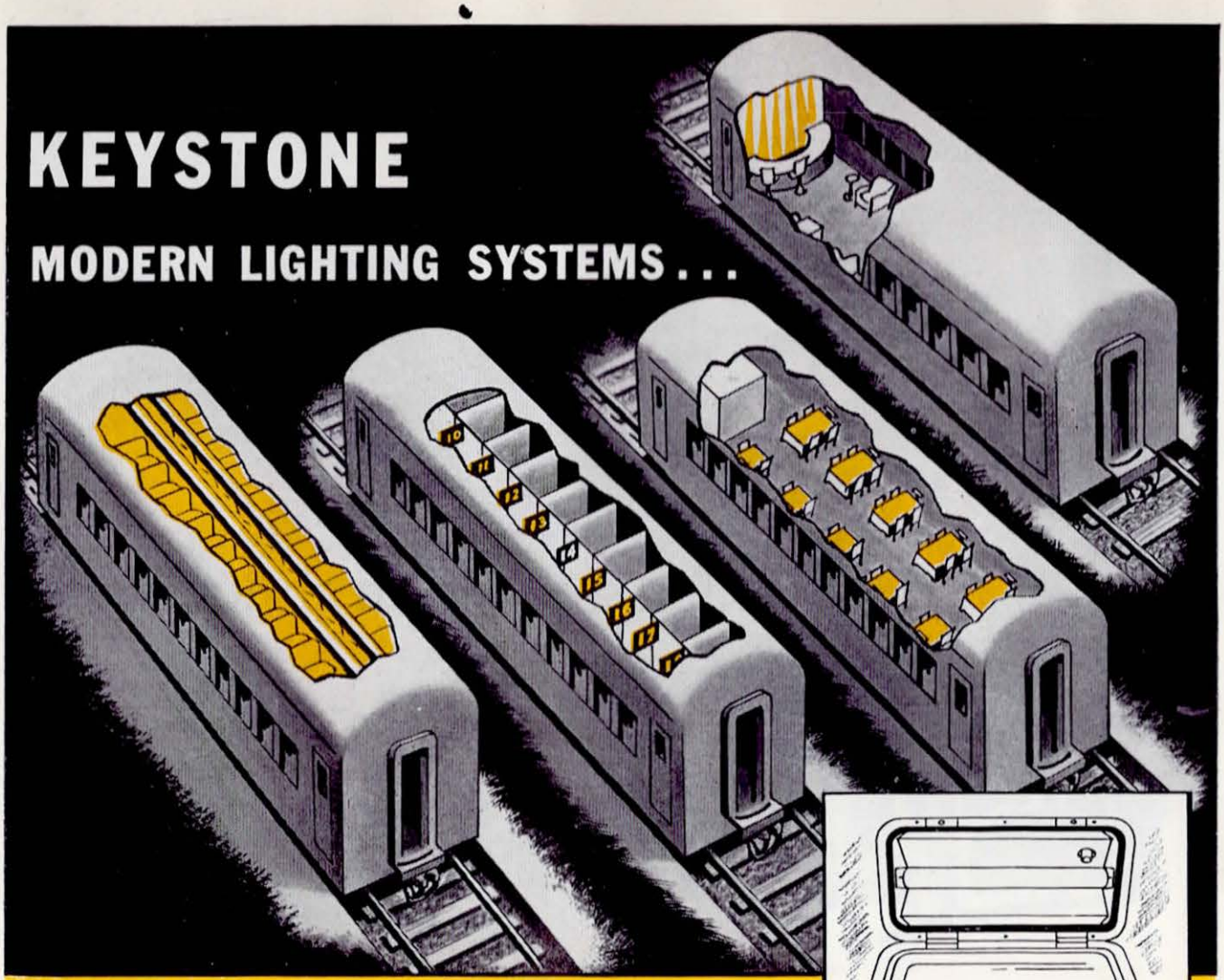
Western Electric

Distributed by Graybar — Offices in 100 Principal Cities

DISTRIBUTORS: IN THE U. S. A.—Graybar Electric Company. IN CANADA AND NEWFOUNDLAND—Northern Electric Company, Ltd.

KEYSTONE

MODERN LIGHTING SYSTEMS . . .



DESIGNED FOR DURABILITY . . .
LOW MAINTENANCE . . . VERSATILITY

"The practical system for railroad cars"—that's the way one maintenance engineer recently described Keystone Lighting. And behind that statement were many Keystone design features that help make his job easier:

DURABILITY—Each fixture is carefully designed to resist the harmful effects of vibration. Glassware is made of special tempered glass which is stronger . . . harder to break . . . than ordinary glass. Pressed steel construction and removable Alzak aluminum reflectors combine strength and light weight to provide a system with long, trouble-free life.

NEGLIGIBLE MAINTENANCE—Between the door and the body of each fixture is a heavy felt gasket making the system virtually dust-proof. When cleaning or relamping is necessary, hinged doors make the fixture interior readily accessible.

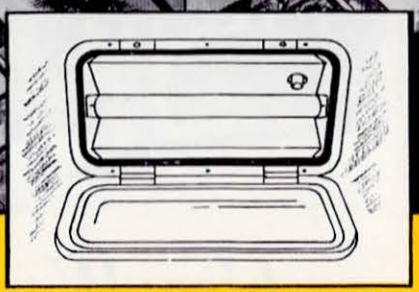
VERSATILITY—ESM engineers have developed certain fixture types to an unusually high degree of lighting excellence. These can be installed in several locations—interchangeably—and provide optimum lighting to each of the locations.

Thus for fixtures of beauty, safety, practicability . . . specify Keystone and you specify quality lighting. Write for catalog.

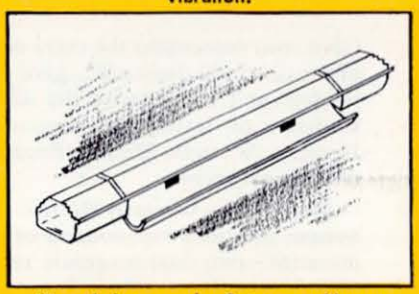
ELECTRIC SERVICE MANUFACTURING COMPANY

LIGHTING—LIGHTNING ARRESTERS—HEADLIGHTS—SHOP TOOLS—SHELVING

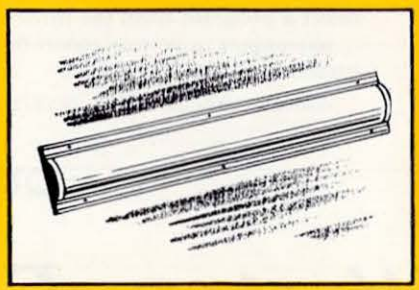
1717 CAMBRIA STREET PHILADELPHIA 32, PA.



Heavy felt gasket makes fixtures dust-proof. One-piece body unaffected by vibration.

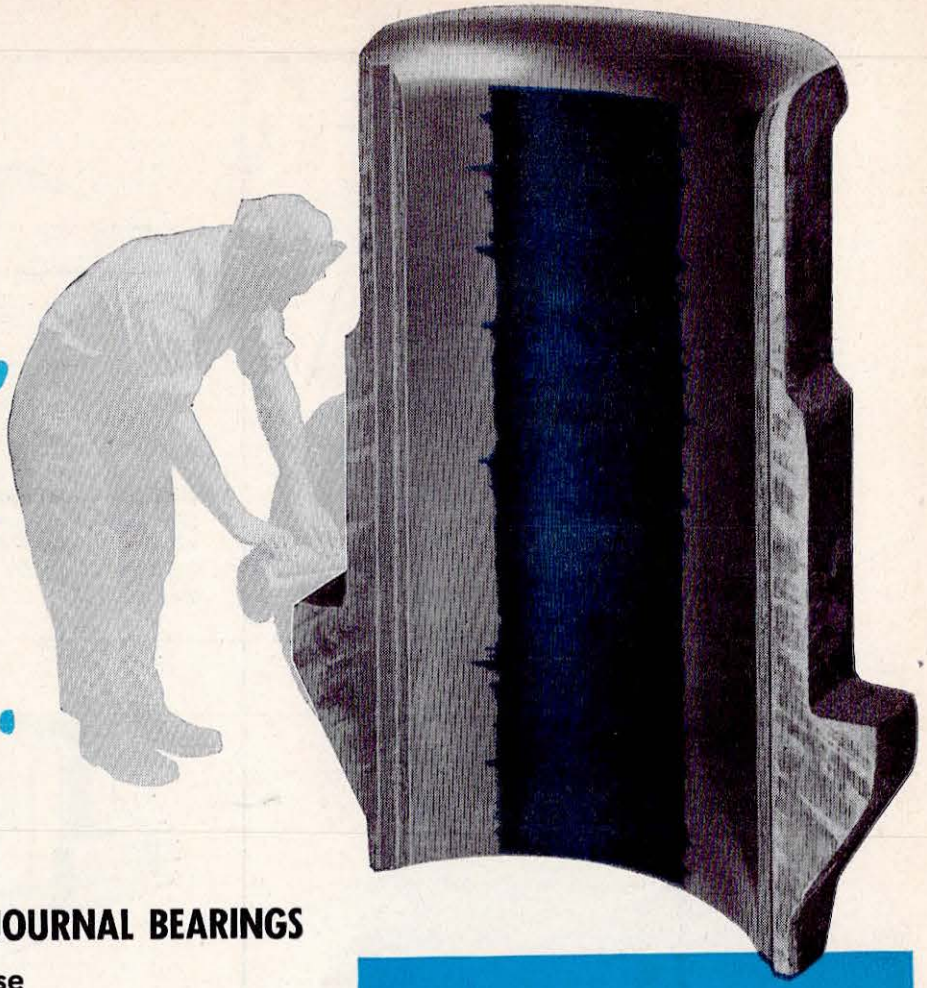


Hinged doors make fixture readily accessible for easy relamping.



This typical fixture is adaptable to center ceiling, bedroom ceiling or under baggage rack lighting.

"Bluing In" Proves It...



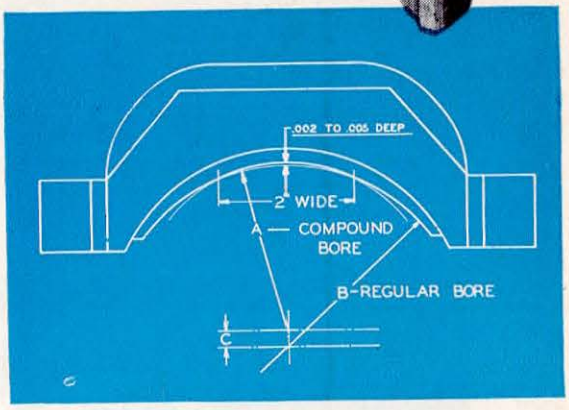
3 important reasons why
N-B-M COMPOUND BORE JOURNAL BEARINGS
save time, labor and expense

Insure a Perfect Fit. The N-B-M Compound Bore Journal Bearing has a wider contact area right from the start—insures a perfect fit that is superior to hand scraping.

Permit Better Lubrication. The wide contact area provides maximum fluid film pressures . . . better lubrication that reduces operating temperatures during the critical period of bearing run-in.

Ready for Service as Shipped. N-B-M Compound Bore Journal Bearings are precision-machined. Ready for immediate installation on standard or undersized axles without need for time-consuming hand scraping and fitting.

Several leading roads have reported big savings by using N-B-M Compound Bore Journal Bearings. These bearings conform with standard A.A.R. dimensions . . . require no special installation or special journal boxes. Available at no extra cost over standard journal bearings.



DETAILS OF N-B-M COMPOUND BORE JOURNAL BEARING
The Compound Bore Bearing consists of a secondary bore imposed in the primary bore. No hand fitting or scraping needed for installation on either standard or undersized axles.

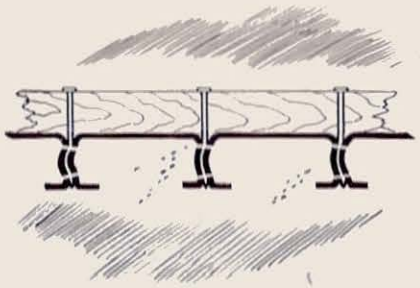
ONLY NATIONAL BEARING DIVISION PRODUCES THE COMPOUND BORE BEARING. IN FREIGHT OR PASSENGER SERVICE—FOR ORIGINAL EQUIPMENT OR REPLACEMENT—IT IS THE ANSWER FOR BETTER BEARING SERVICE. WRITE FOR TECHNICAL INFORMATION.

AMERICAN Brake Shoe COMPANY

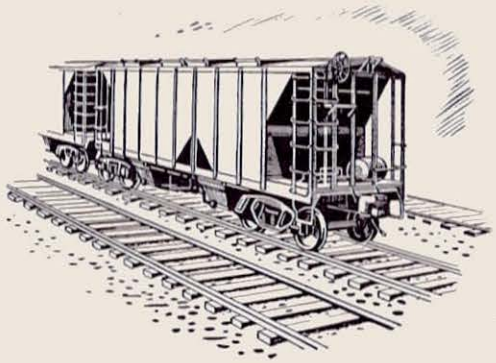
NATIONAL BEARING DIVISION
4930 Manchester Avenue • St. Louis 10, Mo.

PLANTS IN: ST. LOUIS, MO. • MEADVILLE, PA. • NILES, OHIO • PORTSMOUTH, VA. • ST. PAUL, MINN. • CHICAGO, ILL.

End-to-End Radio Communication provides safer, speedier handling of your freight, in all kinds of weather, right down the line. This modern miracle is another PLUS, in Katy's famous "on time" shipping service.



Nailable All-Purpose Steel Flooring trims terminal delays by making car floors suitable for all types of freight. A Katy service innovation in the Southwest, for more versatile, faster handling of your goods.



Hundreds of New Cars—new gondola, hopper and box cars, specially built to carry *all* types of heavy cargo shipments, for added capacity, added service, even more dependability when your freight goes Katy!

Modern Freight Terminals combine human skill and complete mechanical facilities to precision-process your goods safely and efficiently, to high-speed the handling of your carloads to markets and factories.

You're on the right track when you ship *Katy*

Whatever your shipping needs, look to the precision rail transportation now offered by the Southwest's Main Supply Line. For dependable, careful, time-saving service to, from, and through the Southwest . . . ship KATY!

the Katy

M·K·T
KATY RAILROAD
MISSOURI-KANSAS-TEXAS

NATURAL ROUTE SOUTHWEST

308

SAFE
SOUND • ECONOMICAL

in daily road service on many of America's leading railroads

LATERAL VERTICAL
CUSHIONED MOTION

SCULLIN L-V TRUCKS

50 YEARS' PROGRESS

SCULLIN STEEL CO.
SAINT LOUIS 10, MISSOURI

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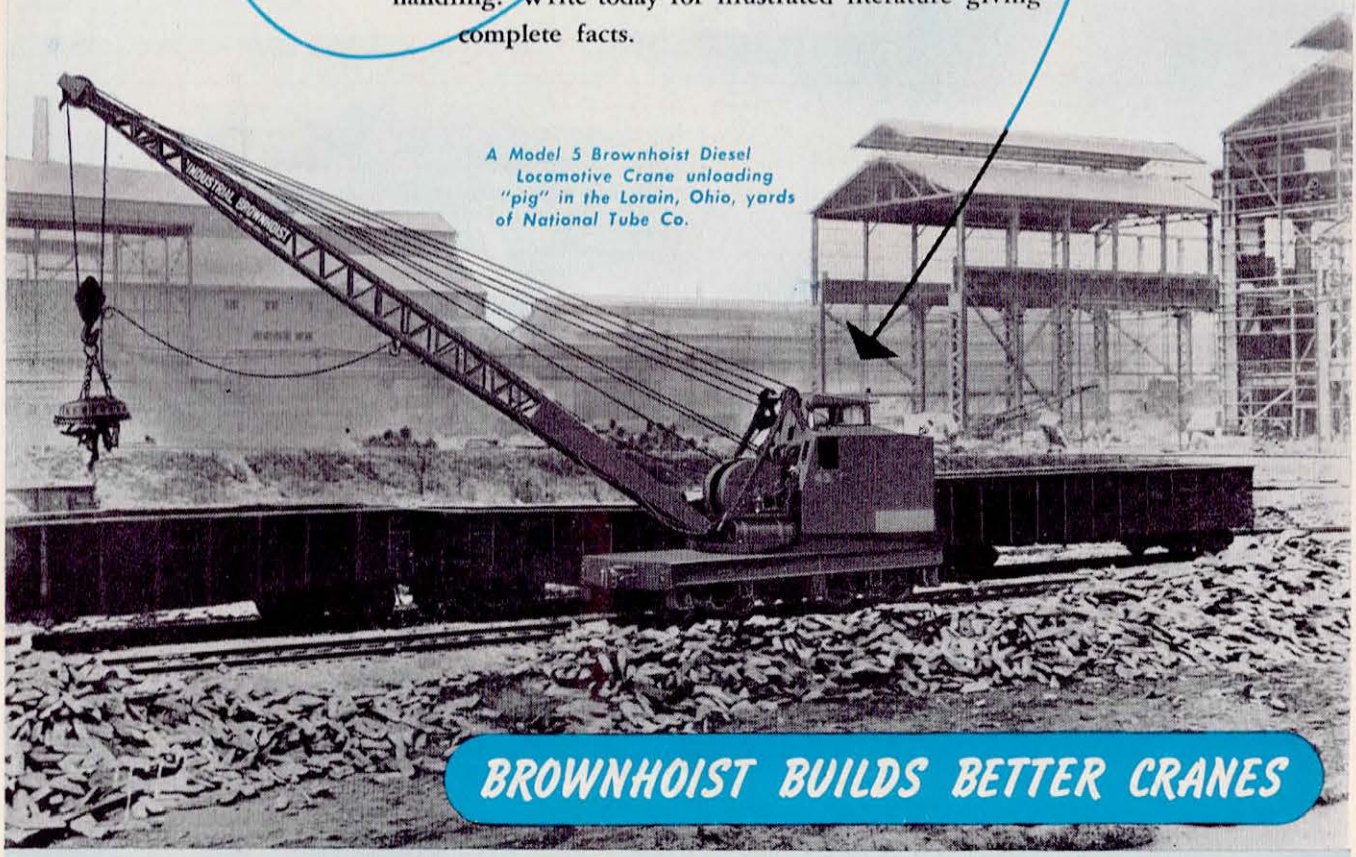

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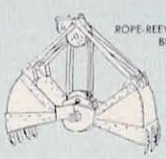
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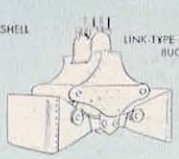
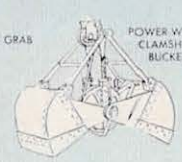
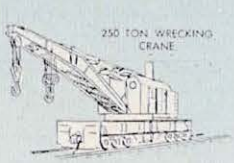
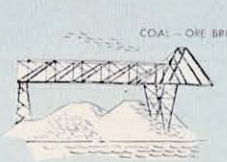

LINK-TYPE ORE GRAB BUCKET


POWER WHEEL CLAMSHELL BUCKET


250 TON WRECKING CRANE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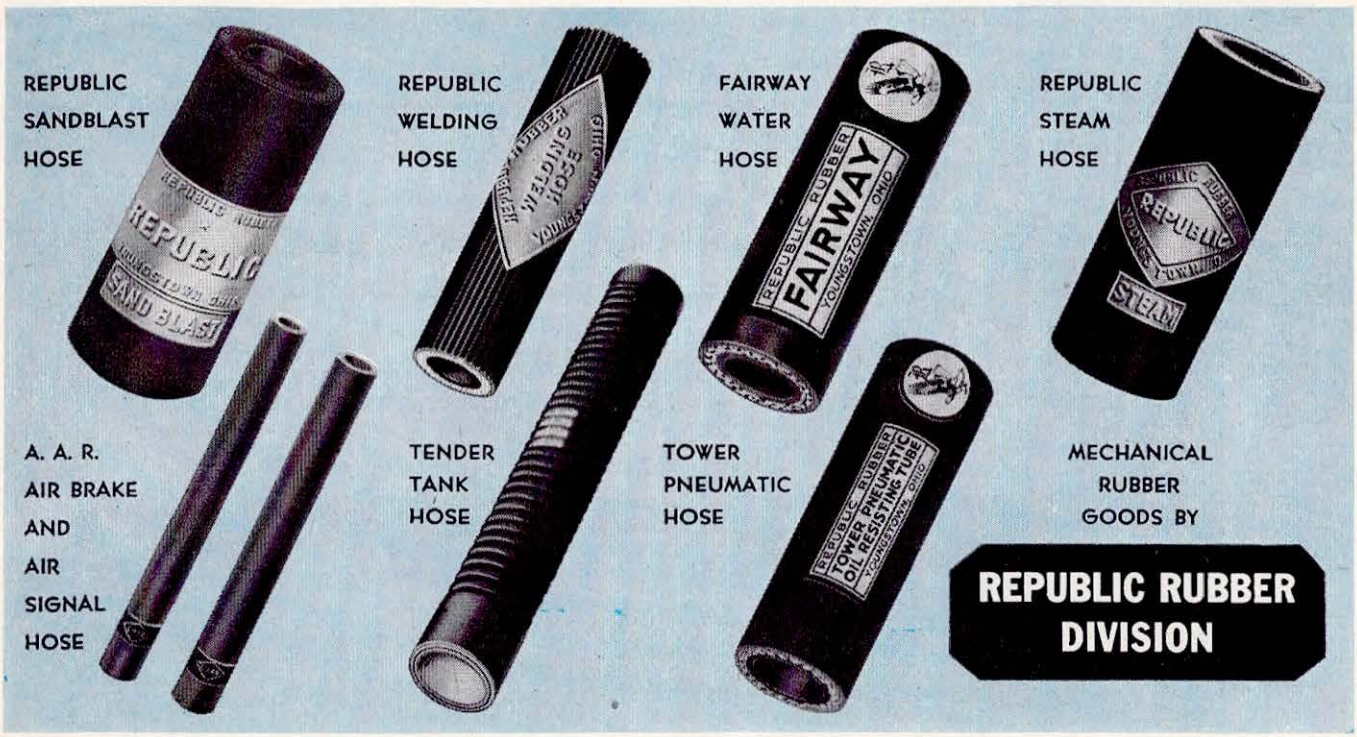

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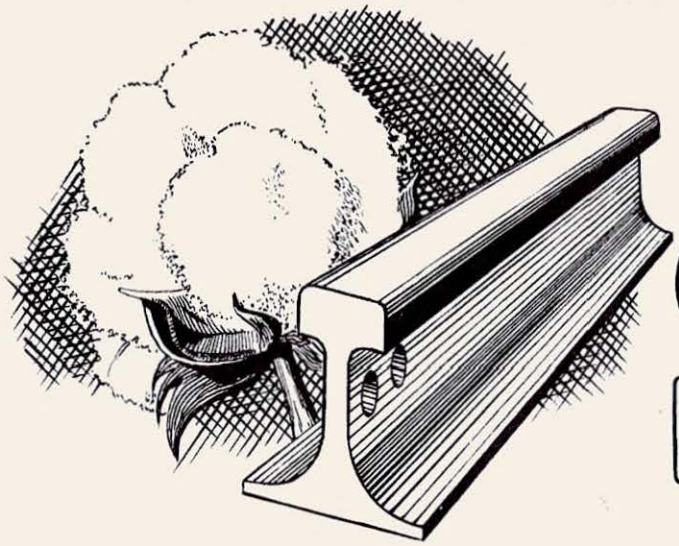

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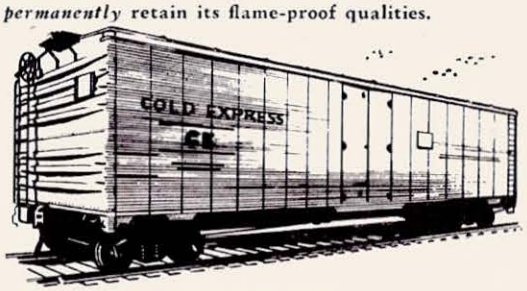

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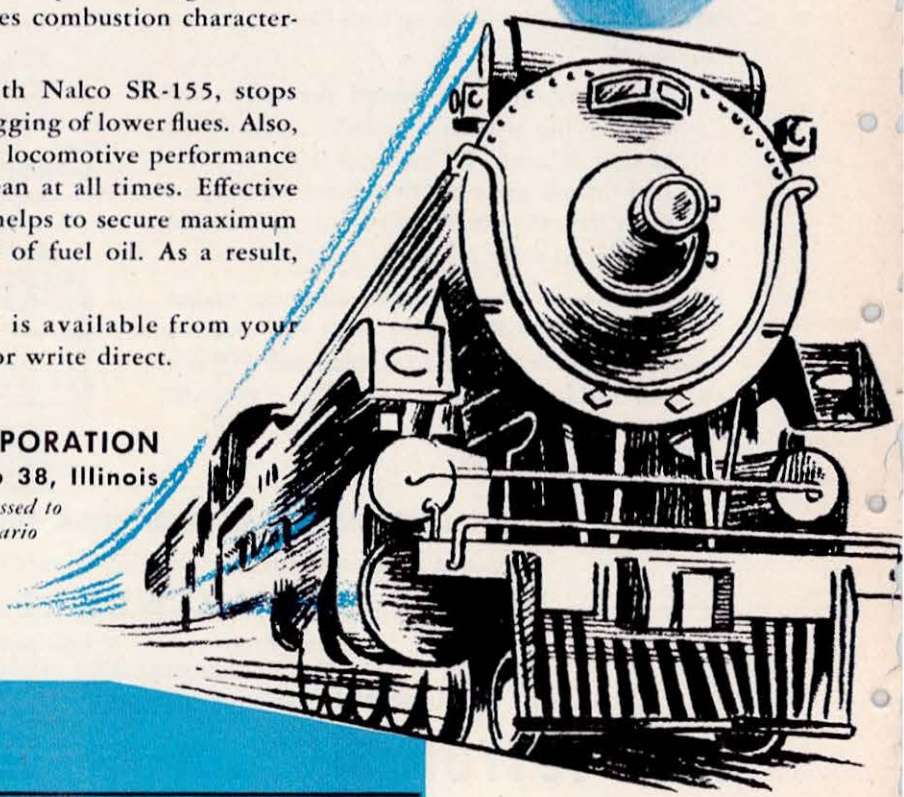

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Vol. 126, No. 26 June 25, 1949

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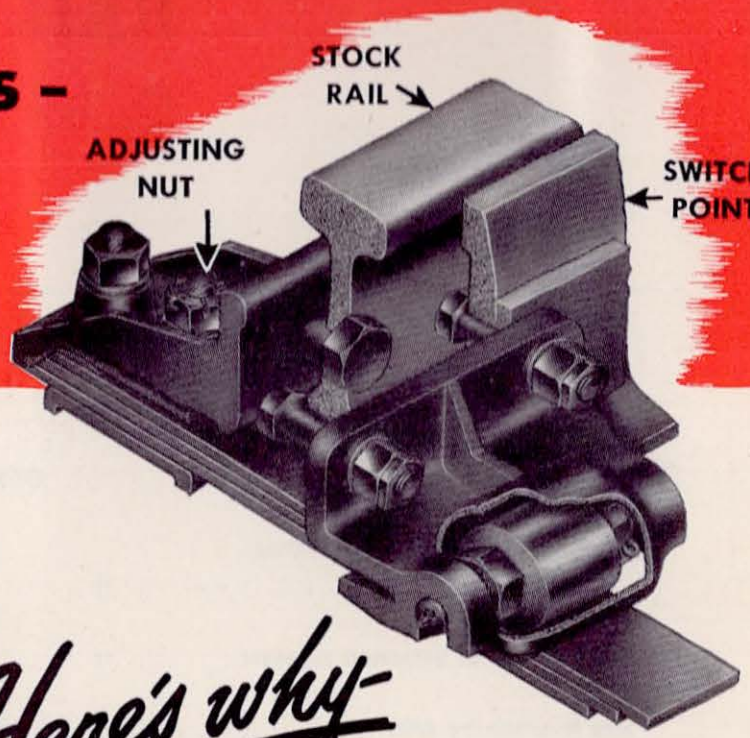

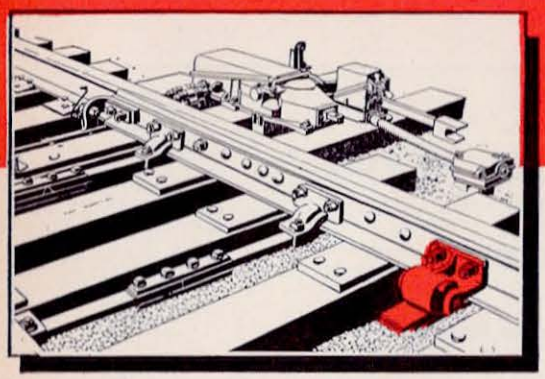

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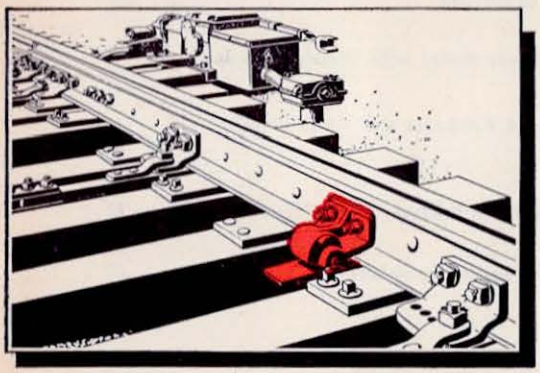
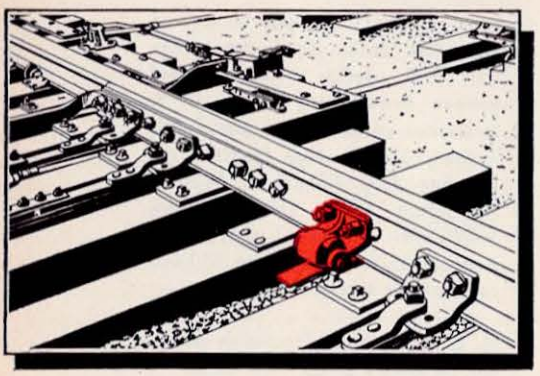


For power switches.



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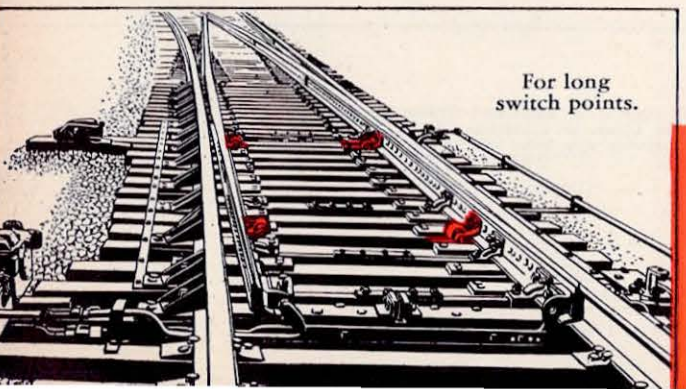

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WEEK AT A GLANCE

CONVENTION SEASON: The convention season is in full swing—two big ones of special interest to railroad men were held last week, and two more are slated for next. The two just concluded—those of the American Association of Railroad Superintendents, at Chicago, and of the Freight Claim Division of the A.A.R. at Boston—are the subjects of reports beginning, respectively, at pages 81 and 99.

MECHANICAL—P. & S. MEETINGS: Next week, at Chicago, come the annual meetings of the Mechanical and Purchases and Stores Divisions of the Association of American Railroads. The programs for these two conventions are printed in detail on pages 90 and 91, followed by several pages devoted to descriptions of new device items of particular interest to mechanical or purchasing officers.

FOR MECHANICAL OFFICERS ONLY: That's not strictly true, because we believe many non-mechanical officers will be interested in our first two feature articles. But they are of particular interest to mechanical men. One, beginning on page 74, is a summary of progress in refrigerator car research, which tells how joint effort by the A.A.R., government representatives and shippers is answering a number of important questions regarding conditions needed for improved reefer service. The other, which will also interest engineering officers, starts on page 78, and describes the Western Pacific's new Oakland, Cal., Diesel and coach servicing facilities—as modern as the "California Zephyrs" which they serve.

THE NEED FOR "COMMON CARRIERS": Public discrimination against common carriers, of various types, in favor of private and contract carriers, has reached the point where it becomes pertinent to ask whether or not there is still need for the common carriers. The question is asked, and some of the implications inherent in it are discussed, in the editorial on page 71.

"REPARATIONS": The Justice Department's carefully planned, all-out drive to bankrupt the whole railroad industry through the medium of "reparations" on war-time freight got under way at Washington this week, with hearings before Division 4 of the I.C.C. on five of the 17 cases filed by the department. An account of the proceedings, up to the time this issue went to press, is included in the News section.

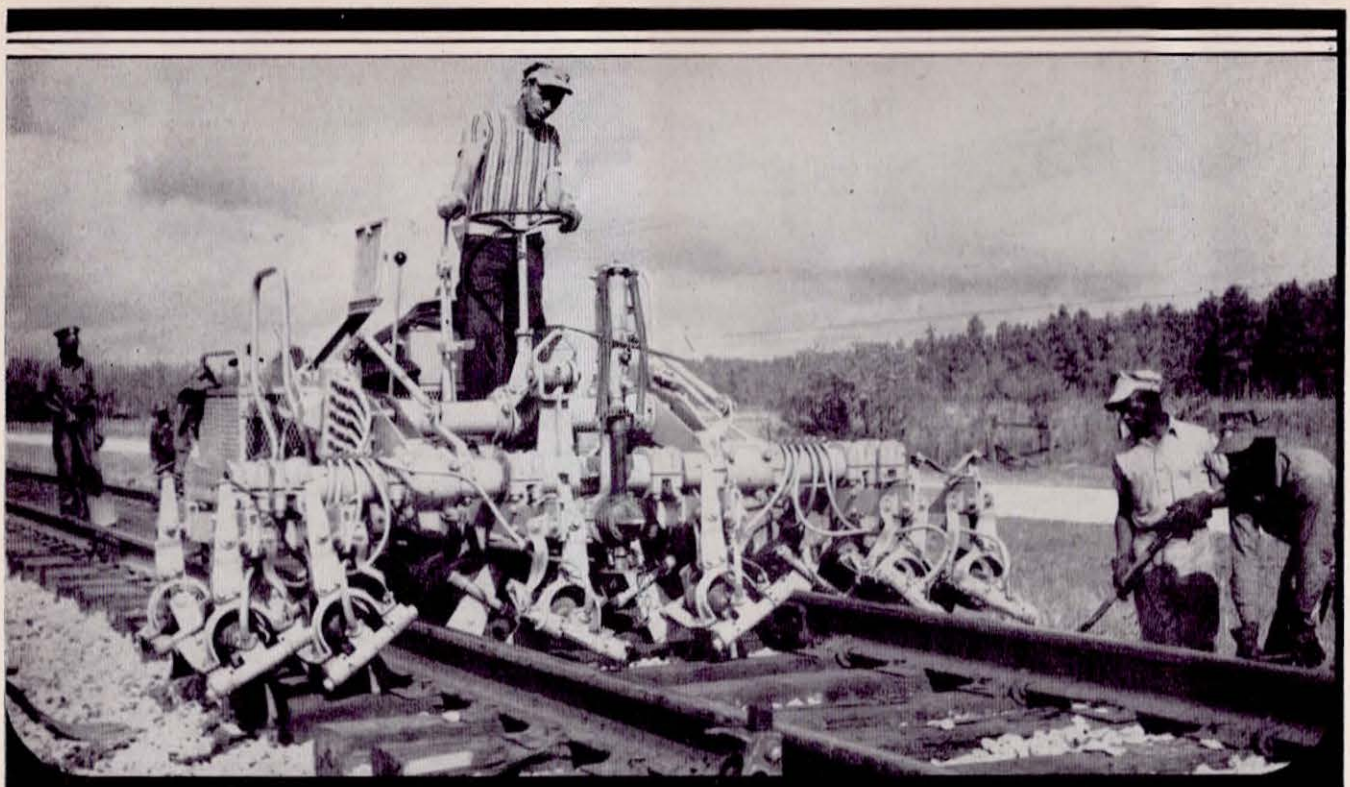
THE TRUTH WILL OUT: Southern railroaders ought to be feeling pretty good this week. For years, they have smarted under, and fought back at, charges that "discriminatory" railroad rates were retarding the industrial development of the South—charges that were never proved and were patently ridiculous. Now those charges have been blown into a cocked hat, as the work of "political leaders, newspaper editors, and individuals with the crusading instinct" in a report by the National Planning Association to President Truman's Council of Economic Advisers, which is reviewed in the week's News. We hope those Southern newspapers which gave so much space to the unfounded charges will give equal attention to this report; and that its publication will give pause to publicity-seeking individuals who try to smear a whole industry to gain personal prominence or cover up personal shortcomings.

SAVING MONEY WITH VISIBLE RECORDS: Purchases and Stores officers, whether planning to go to Chicago next week or not, will find valuable data in the account (page 88) of the Burlington's use of a visible record system at its Aurora, Ill., storehouse. Dollar savings in man-hours, and in paper, as well as fewer inventory adjustments and better material conservation are some of the advantages being realized.

337: That is the total number of Diesel-electric locomotive units for which orders have just been placed, by roads as widely separated as the C. & O. and Southern Pacific, the R. F. & P. and Spokane International. Details of the orders, one of the heaviest weekly aggregates on record, are included in the Equipment and Supplies News.

TO BE TAKEN WITH A GRAIN OF SALT: Since the beginning of the year, traffic handled by the larger common carrier truck companies has shown signs of "levelling off," according to a compilation of truck loadings issued by the American Trucking Association and summarized in our News section. Such traffic, the A.T.A. cautiously suggests, may even be entering "a period of decline." The figures may afford some few grains of comfort—but they certainly give no occasion for undue optimism, for they cover only the larger *common carriers*. They do not indicate that there has been any decline, or even a levelling off, of tonnage rumbling over publicly-financed highways in under-taxed and under-regulated private or contract trucks. And, as our leading editorial suggests, it is the private and contract haulers that are really hurting the railways—and common carrier trucks as well.

LOGIC VS. NOISE: This week, at Washington, as reported in the News pages, the Interstate Commerce Commission heard oral argument on the rate procedures agreement proposed by Western railroads under the Bulwinkle-Reed Act. More accurately, the commission heard arguments in favor of the agreement from railroad and shipper attorneys; against it, from Justice Department lawyers, the commission heard lots of noise, but very little logic. "We're just agin it" seems to be a pretty fair summary of the department's so-called "case" in opposition to the agreement.



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Has the "Common Carrier" Idea Outlived Its Usefulness?

Can it be that the public no longer really needs the services of "common carier" transportation—those agencies, that is, which are required to serve all comers alike and at prices carefully prescribed to minimize discrimination as between customers and localities? The representatives of the public for dealing with these carriers—namely, the legislative and regulatory authorities—appear to believe that this question should be answered in the affirmative. In any event, they are falling far short of providing for these carriers the conditions which will permit them to thrive, and thus to improve and extend their service.

The most conspicuous examples of the evil days into which these great transport enterprises have been permitted to fall are the urban rapid transit systems in our large cities—e.g., New York, Chicago and Boston, where public ownership has taken over the properties to assume financial burdens which private investors no longer had the resources or the willingness to support. The Long Island Rail Road and the short-haul passenger service of the Old Colony Railroad in the Boston area afford other noteworthy examples of transportation service which the people—speaking politically—insist be retained, but for which they appear reluctant to pay compensatory charges.

The most spectacular instances of persistent failure to earn operating expenses, let alone a moderate return on invested capital, lie in the field of urban passenger transportation, but the difference between the situation of these operations and that of the railroad industry as a whole—which depends largely on long-haul freight service for its revenues—is one of degree and not of kind. The nation's Class I railroads, for example, have not been able or willing to seek new money *from investors* for additions and betterments to their fixed properties for 18 years. Such improvements of this kind as they have been able to make in the intervening period (excluding those in rolling stock and motive power, of course) have been financed, with insignificant exceptions, by the reinvestment of meager earnings. Unless the people esteem these common carriers a lot less than they usually insist—especially when one of them proposes abandoning its service in whole or in part—then they would do well to see to it that their servants in the legislatures and on regulatory bodies take their responsibility for "fostering guardianship" of these carriers more seriously in the next decade than they have done for the past twenty years.

Government Intervention No Longer Needed

The justification for the detailed regulation of pricing and service to which the common carrier is subjected is derived from the assumption that most people are unable to provide their own transporta-

tion and, hence, *must* rely on common carrier service; and the further assumption that the common carrier is a monopoly—and hence is strongly motivated to charge extortionate prices and to engage in wholesale discrimination against persons and places where the monopoly power is most complete. Limiting the discussion here to the transportation of freight for distances in excess of 100 miles—*can it be seriously contended that the great majority of such traffic any longer needs government intervention to avoid being overcharged?*

The answer to that question must be in the negative, because an enormous tonnage has been diverted from the common carrier railroads for transportation by other means—mostly contract and private trucks—at charges which are lower than the regulatory authorities have decreed to be fair. This traffic has been that which is economical to haul, and the railroads could doubtless have reduced their charges sufficiently to have retained it—and still have been money in pocket. But here their "common carrier" status has been used to defeat them—because, under the "common carrier" concept, reductions in rates to meet favorably-situated competition are not permitted unless similar reductions are also made on less-favorably-situated traffic. Since the railroads could not afford to make the reductions on virtually *all* of their traffic that the contract and private trucks have seen fit to make on only *some* of it, they have been prevented from holding onto a large tonnage which, except for restraint from the regulators, they could easily and profitably have held.

Purposeless Sadism

To deny to the railroads—allegedly for the purpose of "preventing discrimination"—the opportunity to compete for traffic being spirited away by contract and private carriers is to do homage to a mischievous fiction, because the discrimination against patrons of common carrier service arises at the moment when the unregulated contract and private carriers go out after the attractive part of the common carrier's traffic, leaving only the unattractive part to the common carrier. Unless the legislative and regulatory authorities intend to bring the contract and private carriers under regulation or force them to assume "common carrier" status—then to deny the common carriers an opportunity to meet this competition is a pure act of purposeless sadism, serving not one whit to protect the customers of the common carrier.

Indeed, this short-sighted and senselessly punitive regulatory attitude toward the railroads—while it does not prevent discrimination in charges in favor of shippers able to use to advantage contract and private trucks—does serve the purpose of denying to the railroads the profits which they would derive from handling the traffic they are forced to forego. The loss of these profits curtails their credit, and hence their ability to improve and economize the service they offer to their customers paying prescribed rates. By striving without realism to prevent purely nominal discrimination, this regulatory attitude serves to make the actual discrimination worse. The function of regulation of common carrier service should be to discipline it, if necessary, but not to subject it to starvation.

Perhaps the easiest way out of this fatal absurdity would be to insert a clause in the Interstate Commerce Act and the Antitrust Act, making the restrictive provisions of those measures applicable to the railroads only when railroad earnings have averaged 6 per cent or more on the investment for at least three consecutive years. The public is certainly not being gouged by—and hence requires no regulatory protection against—an industry which is profiting at less than 6 per cent. If this expedient is not acceptable, then somebody had better come up with a better one which will accomplish the same purpose—and fast. What has happened to the urban transit systems and to the Long Island Rail Road could happen to a lot of freight-carrying railroads too. Actually, transportation is as highly competitive a business as is to be found anywhere. The assumption that it is a monopoly and, hence, must be regulated to prevent mistreatment of customers is an anachronism. There is, for example, a thousand-fold more competition in transportation than there is in the manufacture of steel or of automotive vehicles, which industries are not regulated at all as to price policy.

WHY ENCOURAGE AN UNDESIRABLE SITUATION?

If the railroads want to discourage the organization of their supervisory officers, why do so many of them encourage, or at least tolerate, conditions conducive to such organization? Because of these conditions, organizers from within and without already have unionized supervisors in the track, bridge and building, and water service departments, as well as groups in the engineering and signal and telegraph departments, on a considerable number of roads—and because such conditions still exist in other places, the union issue is currently being pressed on a number of other roads.

It would be incomprehensible that these groups of supervisory officers should want to organize, if the conditions of their employment were reasonable, because such organization cannot operate otherwise than as a discouragement to the alert and progressive personnel comprising them, and it can scarcely

be expected to advance the over-all interest of their industry. From the standpoint of the railways, it is of the greatest importance that these supervisory officers be retained as a part of management and that the roads retain the undivided loyalty of these men. Almost any reasonable concessions are in order to attain these ends.

While this is true with respect to all of these supervisory officers, it is especially so of roadmasters and supervisors, each of whom has hundreds of men and many hundreds of thousands of dollars worth of equipment and materials under his direction; and it will become increasingly imperative under the 40-hr. week, beginning September 1, when still more alert, creative and meticulous supervision alone can bring about the increased efficiency that will be required to offset sharply rising labor costs.

If these be facts, why do some roads, for example, disregard constant complaint about inequity in salaries existing between roadmasters or supervisors and other junior officers of comparable rank and responsibilities in other departments? Why do they brush aside complaints about an inadequate spread between the salaries paid line and terminal supervisors to compensate for the longer hours, more frequent emergencies and higher living costs generally encountered by the latter; about a salary basis that often sees general foremen secure greater compensation than roadmasters and supervisors; wide disparity between the salary basis on different roads operating in the same general regions and under similar conditions; abuse of night calls and generally long hours; lack of adequate relief time and of assured vacations in normal vacation seasons; inadequate opportunities for promotion to positions of greater responsibility; and lack of a chance to apply for those positions that do become available through ignorance of the openings until they have been filled?

No class of supervisory officers can be said to have shown greater loyalty over the years to their properties than the roadmaster and supervisor, and with little complaint, despite long hours and heavy responsibilities. But just because protests have not been loud and constant it does not follow that grievances do not exist—grievances which are reinforcing the efforts of organizers to divide the loyalty of these supervisory officers through organization. Legitimate grievances do exist on some roads, and those managements which constantly choose to disregard them—refuse to face realities—are inviting unionization of their subordinate officers.

Most roadmasters and supervisors have never wanted an easy job; they don't look for one now. Furthermore, most of them are inherently management-minded—want to remain part of management—and resist the restricting and leveling influence of organization. But they do want equitable treatment and, justly, to be accorded recognition in measure of their importance to their employers.

SHOP MANUFACTURING COSTS

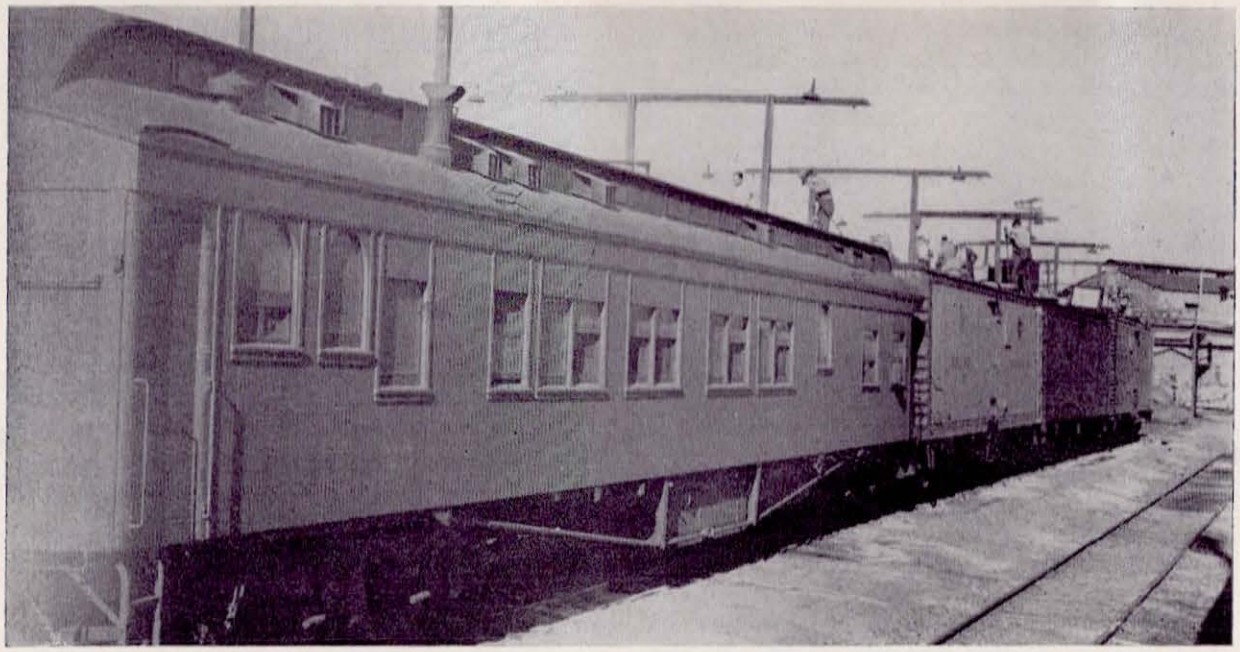
For several years now, the shop manufacturing committee of the Purchases and Stores Division of the Association of American Railroads has recommended that each railroad appoint a joint committee, composed of personnel from the accounting, mechanical, engineering, test and purchases and stores departments, to study shop manufacturing costs. The subject of the profitability of shop manufacturing was one of the most strongly debated ones at last year's p. & s. meeting, and it was by no means certain that all members agree that such activities are profitable, except possibly when the unavailability of materials is the governing factor.

In the light of this continued recommendation by the purchases and stores group, many members of which are vitally concerned with such facilities on their railroads, it seems fitting to examine what might be gained by such a study, especially when a railroad's decision to do shop manufacturing may be governed by many factors other than straight out-of-pocket cost. The cost of, or benefit from, these outside considerations, since they cannot be determined quantitatively, can hardly be taken into account in making a cost figure for the railroad-manufactured article for comparison with a similar item purchased on the open market. Therefore, since cost comparisons with open market prices would be only approximate, perhaps the main thing that could be learned from such a study would be some indication of where the out-of-pocket costs could be pared.

This in itself would be a finding of no inconsiderable value. Such a study might turn up the fact, for example, that maintenance costs on the manufacturing machinery were out of line with the amount being invested in new machinery, making the cost of manufacturing higher than necessary. That's what a West Coast firm found recently when trying to determine why it wasn't making as much money as it thought it should. It was learned that it was spending $3 on maintenance for every $1 of capital expenditure on producing tools. The purchase of some new tools quickly remedied that situation, and brought the ratio down to $1.12/$1, and the company is faring better now.

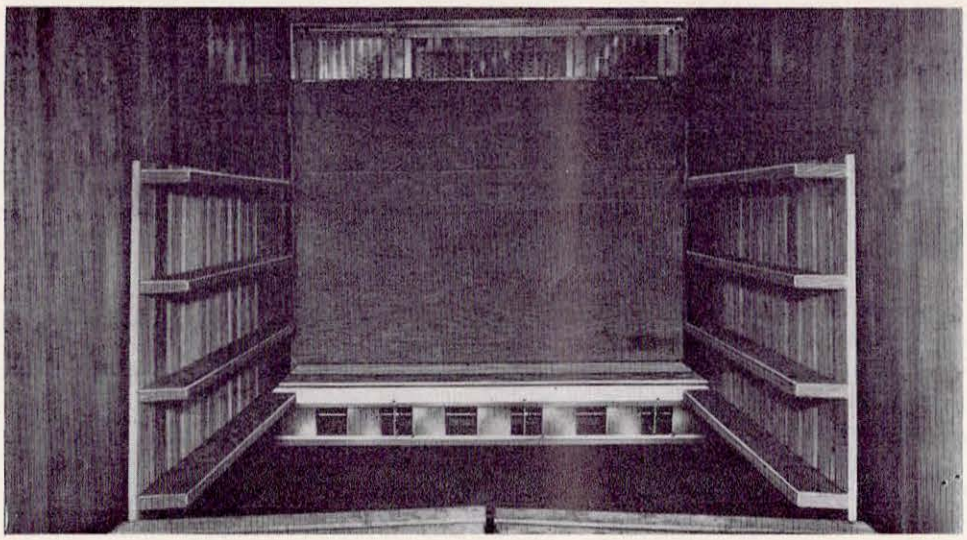
An examination of costs is seldom time wasted, and such a committee as suggested by the Purchases and Stores Division should be worth while, if it can help in any way to reduce the costs of shop manufacturing—quite apart from the light it might or might not shed on the question of whether a railroad's manufacturing operations are profitable or not.

Complete socialization in America . . . is close enough for us to feel its hot breath. The way to prevent being devoured by it is to halt the encroachment of government on our time-honored system of free, competitive enterprise. —*Legh R. Powell, Jr., president, Seaboard Air Line.*



Preparing office and test cars for frozen food test run

Operating crew reading instruments and recording temperatures



Section of floor racks raised to show location of fans

REFRIGERATOR CAR RESEARCH PROGRESSES

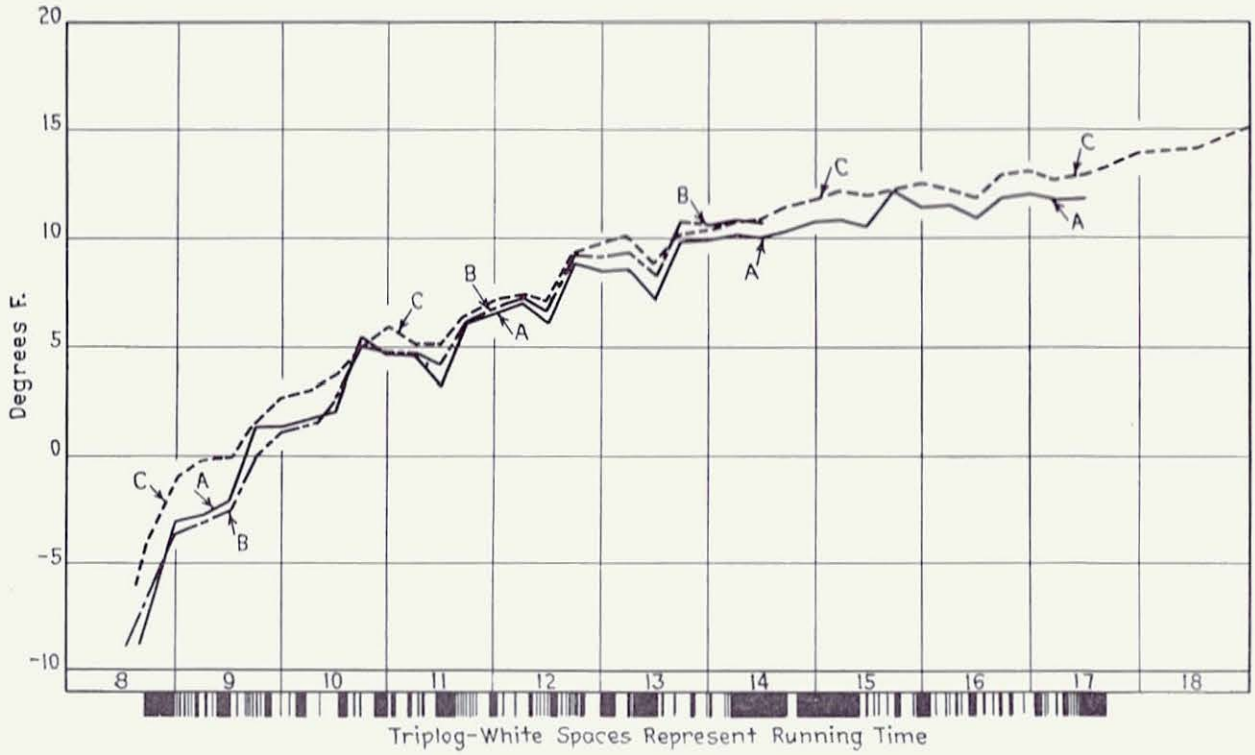
Joint effort by the A.A.R., government representatives and shippers answers a number of important questions regarding the conditions needed for improved service

In the last few years, the Mechanical Division of the Association of American Railroads has greatly expanded its research and test activities which have a vital bearing on railway service of the future and it is regrettable that plans already developed for carrying on this work in the balance of 1949 and 1950 have had to be curtailed to some degree by current retrenchment demands. With highway trucks hauling in some instances up to 50 per cent of perishable food traffic, a more aggressive attack on the problem posed by competition for railroads, individually and collectively, would be to redouble research efforts in every phase of refrigerator-car design and use, which may facilitate giving improved service at less cost.

Among other studies now being made by the Mechanical Division, one of the most important is the attempt to determine refrigerator car physical characteristics and methods of use which will give the best service possible within necessary cost limitations. One reason this particular study is so interesting and promising is that it represents a joint effort of railroads, car owners, government agencies and shippers, the A.A.R. Refrigerator Car Research Bureau having been organized in March, 1946, to carry on an intensive program of tests in cooperation with the U. S. Department of Agriculture and shippers of various commodities.

This bureau was created after a critical analysis of the needs by the General Committee of the A.R.R. Mechanical Division. General plans of procedure and objectives are set up by a joint group which includes: (1) a six-man subcommittee of the A.A.R. Committee on Car Construction, headed by R. D. Bryan, mechanical assistant of the Atchison, Topeka & Santa Fe; and (2) a 14-man committee representing the Committee for Refrigerator Car Research and Mechanical Design of the railroad-owned or controlled refrigerator car lines and headed by R. G. Setzekorn, mechanical superintendent of the American Refrigerator Transit Company. Mr. Bryan serves as chairman of the joint

Above—Three types of containers used in peach loading test. Right—Covered entry used in loading frozen foods



Comparison of average commodity temperatures of all 18 positions in Cars A, B and C

group. Detail testing and the work of preparing reports is done by a staff and field representatives of the various interested groups under the direction of Chief Engineer C. A. Richardson.

Four Tests in 1948

Organized originally to determine the efficiency of present refrigerator-car designs from the standpoint of insulation thickness, general characteristics and the use of forced-air circulation, the Refrigerator Car Research Bureau has extended its studies to include heat and water vapor transmission. Four test programs were completed in 1948 and the first part of this year, including: (1) refrigeration results with various types of containers, also with and without forced-air circulation; (2) influence of different insulation thicknesses in long-haul frozen-food shipment; (3) similar test in short-haul service with over 50 per cent standing time; and (4) relative merits of various types of heaters in refrigerator car service.

Final test reports have been rendered on the first three of these studies and the results will be summarized in the following paragraphs. Results of the heater service tests will be made available in a final test report soon to be issued by the bureau.

Fan Cars Tested

In the container and fan-car test to show relative merits of natural vs. forced-air circulation, the eight test cars used were 40-ft. end-bunker refrigerator cars, steel sheathed, with stationary bulkheads, wood floor racks, no flues or wall racks, 3 in. of insulation in walls and 3½ in. in the roofs. Five of the cars were equipped with fans for forced air circulation and three were not equipped. Each car had a 23-thermocouple master cable and all cables were connected through a remote-control selector switch to an electronic potentiometer in the office car. With this system, the test party could read all the positions in all cars at any time, whether the train was moving or standing.

The test cars were loaded with peaches in either baskets or boxes at Spartanburg, S. C., on July 23, 1948, and unloaded at New York on July 27. A complete icing record was kept for each car, a trip log, temperature record, and data on loading and unloading, including destination inspection records. Load temperatures were plotted in the report for convenient comparison.

As a result of this test, it was found that, regardless of the type of container or type of car, all loads arrived at destination in good condition so that all may be considered satisfactory under conditions similar to those of the test. However, there were some differences, as shown by the graphs in the report.

For instance, the fan cars showed more rapid cooling in the top layer, and more uniform load temperatures, although the average load temperatures were about the same. In non-fan cars, there was no significant difference in load temperatures between loads in either the box or basket containers. In fan cars, the box container loads showed considerably faster cooling in the top layers than did the basket loads.

In a continuation of earlier insulation tests, the bureau conducted an investigation of the ability of cars

with different thicknesses of insulation to transport frozen foods over long distances in extremely hot weather.

Optimum Insulation Thickness

All three of the test cars were 40-ft., steel-sheathed refrigerators, equipped with end bunkers, forced-air circulation, movable bulkheads and side-wall flues. Car *A* had 6 in. of wall and 7 in. of roof insulation and was equipped with wood floor racks. Car *B* had 4 in. of wall and 4½ in. of roof insulation, being equipped with steel floor racks. Car *C* had 4 in. of insulation in both walls and roof and was equipped with 1¼-in. wood deck on metal stringers for the floor racks. Thermocouple temperature-measuring equipment in these cars was the same as previously described.

A test run was made from Modesto, Cal., to Chicago and East Coast destinations, July 6 to 19, 1948. The loads included cases of Brussels sprouts, broccoli, asparagus, sliced strawberries and tins of whole and sliced strawberries. All cars were loaded from cold storage by conveyor through a canvas-shielded entry. This test showed conclusively the important influence of tightness or compactness of the load on air circulation and consequently on distribution of temperature. Because of the wide variation in loading between cars, a comparison of car performance, based on individual temperatures at selected positions, was difficult. The best comparison available, namely the average of all temperatures of all cars, showed a maximum average difference of about 2 deg. F. for all cars.

Comparing maximum temperatures, it was found that the maximum temperatures in Car *B* were about 2 deg. F. higher than in Car *A* while those in Car *C* were about 2 to 3 deg. F. lower than in Car *A* as far as Chicago, a result in part of greater cooling furnished by the load. During the holdover at Chicago, this advantage disappeared and for the remainder of the run Car *C* had a maximum temperature about 1 deg. F. above Car *A*.

The slight advantage of the heavier-insulated car was most noticeable during this holdover period, but, in normal movement, the volume of refrigeration furnished was large enough to overcome this disadvantage of the lighter-insulated cars to a considerable degree.

Conclusions in Report

It was concluded in the report of this test that, if the record of Car *A*, representing the heavier-insulated cars, is considered satisfactory, then the records of Cars *B* and *C* are satisfactory and these lighter-insulated cars can be used with confidence under the following conditions:

(a) The commodity must be at low temperatures initially.
(b) Loading must be prompt and the car protected from the loss of refrigeration during this period.
(c) The car should be preiced and cooled.
(d) Handling of the cars in transit must be normal and they should not be subjected to unusual delays.
(e) Unloading should be done promptly after arrival and the commodity protected during unloading.
(f) Icing in transit must conform to instructions in effect as issued by the car lines and railroads involved.

These considerations apply as well to the heaviest-insulated cars since the protection furnished by the added insulation cannot make up for the neglect of any one of the factors listed.

While the loading methods used on this test are usually considered satisfactory and are in fact better than many, the results indicate that much care and thought should be given to loading methods.

The records indicate that the temperatures found in a car are by no means uniform and that in mixed loads, with particularly critical commodities, results will be much more satisfactory if considerable attention is given to the location or placement of these critical commodities in the car.

Effect of Short Hauls

The third test referred to was made to compare the ability of refrigerator cars with different insulation thicknesses to transport frozen foods in hot weather on short hauls where there is 50 per cent standing time or more.

Cars *A*, *B* and *C* were again used for this purpose and test run made from Caribou, Me., to Jersey City, N. J., August 4 to 10, 1948, the loads consisting of small cases of frozen peas.

The proportion of running time to non-running time was a little greater than desired for the purposes of the test, the running time being about 48 per cent of the total transit time. The average daily maximum atmospheric temperature was 78 deg F. and the average daily minimum 57 deg. F.

The protection furnished the commodity and cars during loading was inadequate and resulted in commodity temperatures as high as 20 deg. F. during or soon after loading.

Because of this situation, and because the cars were loaded at different times during the day, there was considerable variation in commodity temperatures in cars and between cars, thus making a direct comparison of cars difficult. However, in all cars the high temperatures observed at loading were reduced and the loads arrived at Jersey City at about the same temperatures. The maximum temperature at arrival was 15 deg. F. for Car *B* and 13 deg. F. for Car *C*, compared with 11 deg. F. for Car *A*. The average top temperatures were 12 deg. F. for Car *B* and 11 deg. F. for Cars *C* and *A*, a difference of only 1 deg. between all cars.

Effect of Standing Periods

Some slight advantage for the heavy-insulated car was observed in the top commodity layers during the standing period at Jersey City (34 hr.). The average top commodity temperature rise in this period was 5¾ deg. F. for Car *A* as compared with 7 to 7½ deg. F. for Cars *C* and *B*. The final average top layer temperatures were: Car *A*, 16 deg. F.; Car *B*, 19 deg. F.; and Car *C*, 18 deg. F. All loads at unloading were found in good condition and frozen solid.

As a result of previous A.A.R-U.S.D.A. tests and this test, the conclusion is drawn that cars with 4 in.-4½ in. or 4 in.-4 in. insulation protect the commodity adequately and with normal handling the actual temperature differences between the heavy- and the lighter-insulated cars are not significant.

BEST IN SERVICING FOR THE

Servicing yard and buildings for the "California Zephyrs" at Oakland. The largest building in the group is the Diesel locomotive shop. Note that the entire yard area is paved

Servicing facilities as modern as the equipment they serve have been constructed at Oakland, Cal., by the Western Pacific to administer to the needs of the "California Zephyrs" at their western terminus. These Diesel-drawn, lightweight, stainless-steel trains, comprising six sets of equipment, (described in detail in *Railway Age* of March 26, page 74), were placed in service on March 20 between Chicago and San Francisco by the Chicago, Burlington & Quincy, the Denver & Rio Grande Western, and the Western Pacific. To provide rapid and complete servicing of the trains at the western end of their run at Oakland, whence passengers are taken by ferry to San Francisco, the Western Pacific, at a cost of $880,000, has constructed a fully-equipped coach servicing yard and a Diesel-locomotive servicing shop, with all the auxiliary facilities necessary to assure that they will function on an efficient and effective basis.

The new facilities are reached from the main line of the Western Pacific over a "balloon" track. They consist of a two-track, stub-end, Diesel-servicing and repair shop; a store building; a general utility building; a boiler and lathe building containing a completely automatic power plant; a truck repair building with related facilities; a five-track coach yard with two 550-ft. inspection pits served by a wheel drop pit at one end: a complete mechanical car-washing layout designed to wash a car a minute, which includes a washer control building; Diesel oil storage tanks with an adjacent pumphouse; a transformer house; and an incinerator. An additional facility soon to be erected is a commissary building, which will replace an existing structure now located a mile away adjacent to the yards of the Southern Pacific where Western Pacific trains were formerly serviced.

The unit system of making repairs is used at the new layout, and to implement this system a complete stock of repair parts is kept on hand, including an extra locomotive truck, complete with traction motors and gears, along with generators, spare coach trucks, etc. Thus, an entire assembly, whether a traction motor or a reclining coach seat, can be readily replaced during the servicing period, and later overhauled or otherwise repaired without haste or tension.

Metal Buildings Used

All the buildings are of corrugated metal on structural frames and have concrete foundations which, in the major structures, are carried on piles. Piling was used because of the nature of the subsoil which consists of approximately five feet of fill (compacted by five years' storage of shipyard steel), and about 20

"CALIFORNIA ZEPHYRS"

ft. of blue clay mud overlying hardpan. After the piles had been driven to the hardpan, lengths of 112-lb. scrap rail were placed across their tops and encased in concrete.

The two-track Diesel shop building, 54 ft. by 178 ft. in plan, is built on a monolithic concrete foundation and is painted aluminum on the outside and green and white on the interior. The locomotive door openings are fitted with steel rolling doors, and the interior has cab-level platforms and an 80-ton Whiting drop table.

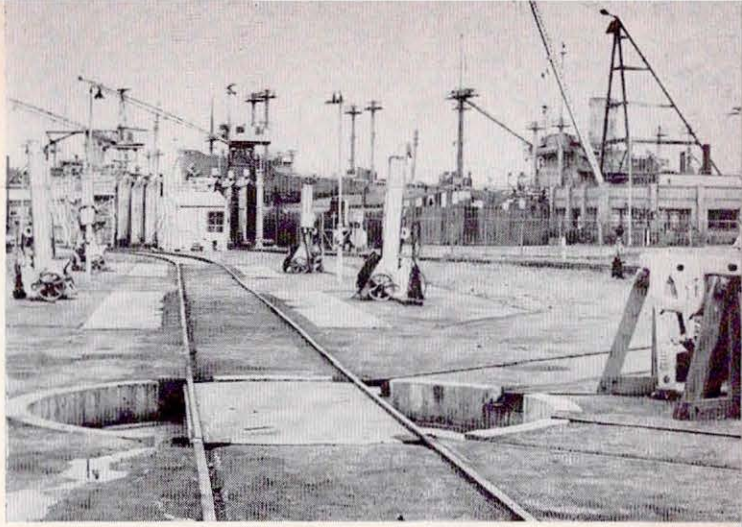
In addition to the two 550-ft. pit tracks the coach yard has three 600-ft. tracks for servicing and storing cars. The wheel drop pit at one end of the pit tracks, which also serves one of the conventional tracks, is fitted with a 40-ton Whiting drop table. Housed in the boiler and lathe building, which is near the far end of the coach-yard servicing pits, is a Sellers wheel lathe. Wheels are carried by lift truck to a 10-track wheel-storage yard in front of the wheel lathe building. This yard is served by a transfer table which delivers the wheels to the lathe.

Washer Does Complete Job

The car-washing set-up, embodying Whiting equipment, is located on the lead track to the coach yard. The first element of this installation consists of elevated platforms, one on each side of the track, from which laborers, using brushes dipped in a cutting solution, scrub the glass windows of the Vista-Domes as the cars passed by. Immediately following the Vista-Dome washing platforms are three sets of revolving brushes. The first set, moistened with a cutting solution, washes the entire sides of the cars, the second set scrubs the window areas with plain water, and the third set, also using plain water, again scrubs the entire sides of the cars. After being scrubbed by the brushes the cars pass through a high-pressure rinse spray which is directed at the tops as well as the sides of the cars. These spray nozzles direct the high-velocity water at an angle opposite to the direction of movement of the cars so that the dirt is washed ahead of the spray and eventually off the car.

In addition to the wheel drop table serving the coach yard, truck handling and repair facilities are provided, which consist of four electric jacks operating on reinforced concrete jacking pads, a truck turntable, and four tracks radiating from the table, including three for storing wheels and one leading into the truck-repair building.

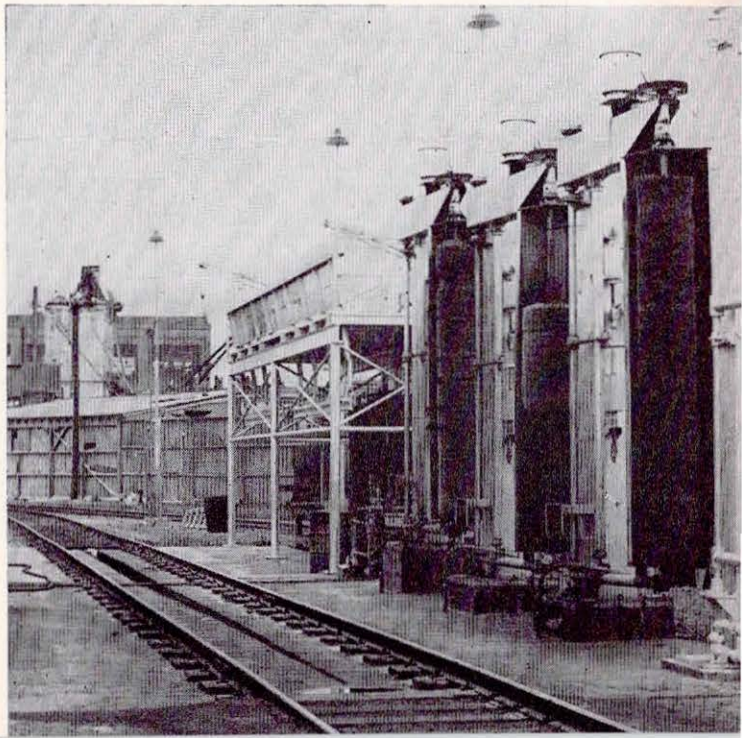
Steam for the requirements of the new layout is provided by two 80-hp. automatic Cleaver Brooks steam generators, operating at a pressure of 125 lb. per sq. in. Air is supplied by a motor-driven Ingersoll-Rand air compressor, and all air is dehydrated before

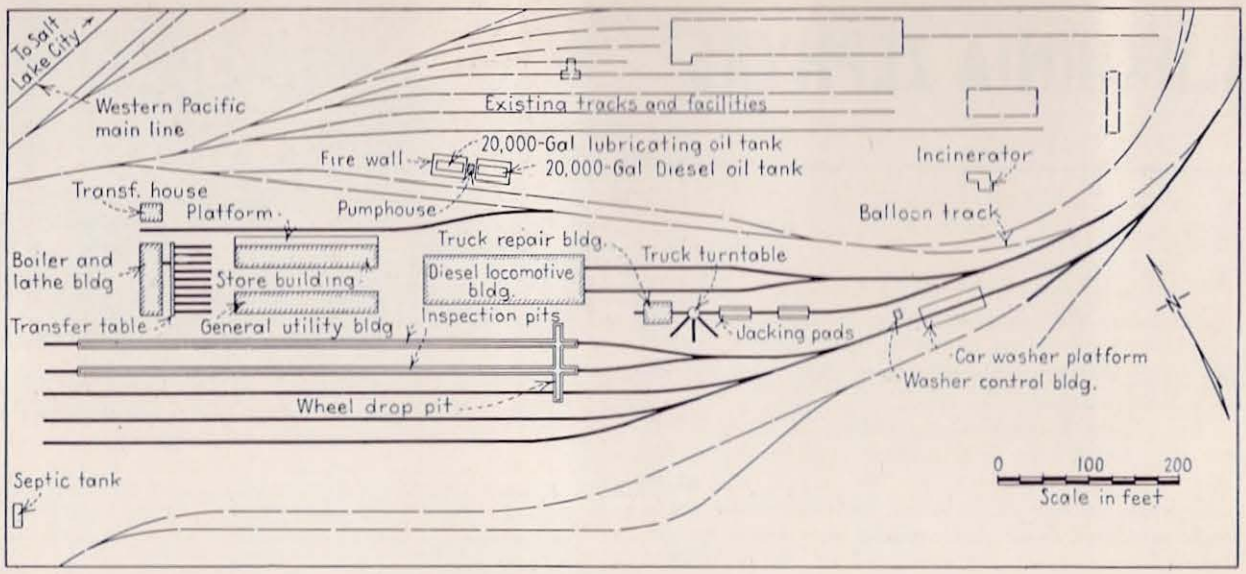


The truck change-out and repair facilities include this truck turntable, with its radiating storage tracks, and the concrete jacking pads and electric jacks in the background

Vista-Domes are scrubbed from elevated platforms. Note also scrubbing and rinsing of running gear

The car-washing platform has three sets of vertical revolving brushes. Pipes for applying rinse spray are in the foreground





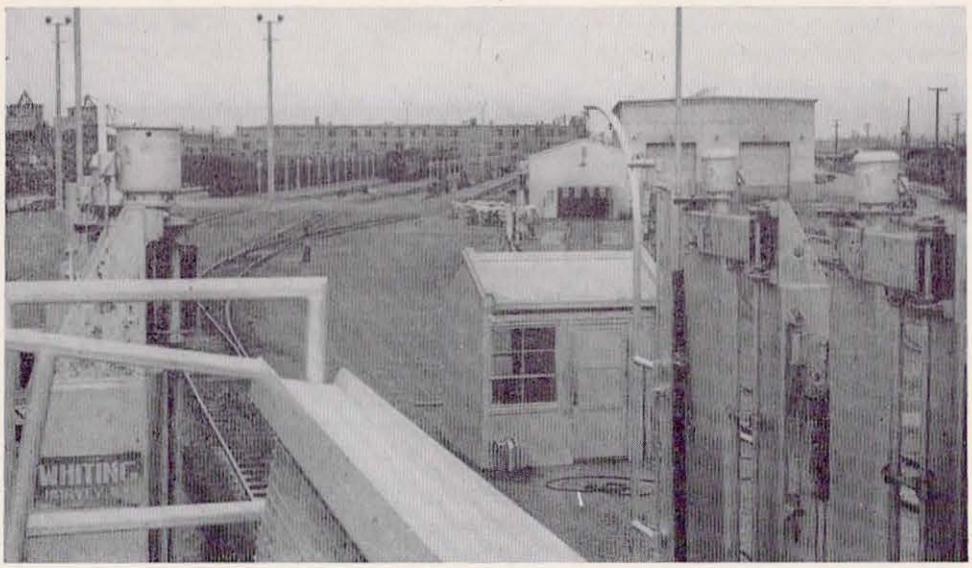
This plan of the new facilities illustrates the complete nature of the installation

storage. Oil storage facilities consists of two 20,000-gal. tanks, one for fuel oil and one for lubricating oil. For disposing of refuse and garbage a brick oil-fired incinerator was included among the facilities, and also a small building in which garbage containers are steam cleaned and rinsed.

Extensive Drainage System

A feature of the new facilities is the extensive drainage system that was installed, which includes both surface drains and perforated pipe drains under the three conventional coach tracks. The drainage system embodies 5,920 ft. of pipe, varying from 6 in. to 21 in. in diameter, and terminates in the Oakland estuary. The sanitary system was laid with approximately 533 ft. of 8-in. coated Armco corrugated pipe and terminates in a 9,500-gal. capacity concrete septic tank. Because of the small difference between the annual maximum high tide, which reaches an elevation of 8.5 ft., and the highest point in the yard, elevation 12.5 ft., it was necessary to install the drainage system with extreme care.

This entire project was planned jointly under the direction of W. J. O'Neill, superintendent of motive power (now retired), and T. L. Phillips, chief engineer. They were assisted by E. W. Englebright, assistant to president; E. E. Gleason, recently appointed superintendent of motive power; A. W. Carlson, bridge engineer; A. A. Kramm, assistant engineer; A. V. Norberg, electrical engineer; and S. F. Burmeister, engineer-inspector.



The comprehensive local lighting and floodlighting systems as seen from the top of the car washer

Division heads pool experience to find new approaches to personnel practices, operation of Diesels, best use of communications, reduction of train delays and prevention of loss and damage

Fred Diegtel (left), superintendent, Delaware, Lackawanna & Western, Hoboken, N. J., newly elected president of the Superintendents' Association. S. M. Gossage (right), department of personnel, Canadian Pacific, Montreal, Que., retiring president of the American Association of Railroad Superintendents

Superintendents Probe Wide Range of Problems at 53rd Convention

Nearly 400 railroad superintendents and other operating department officers from railroads in the United States, Canada, Mexico and Cuba, met at the Stevens Hotel, Chicago, on June 14, 15, and 16 to attend the fifty-third annual convention of the American Association of Railroad Superintendents. John M. Budd, vice-president, operating department of the Great Northern, set the tone of the gathering in an opening "charge" to the railroad superintendents. R. L. Williams, president of the Chicago & North Western, addressed 450 superintendents and their guests at the annual luncheon on June 15.

L. W. Horning, vice-president, personnel and public relations, of the New York Central, spoke at an evening session on June 14. W. R. Triem, general superintendent of telegraph of the Pennsylvania, outlined the progress and the potentials in the use of train telephones in the railroad industry, and showed the Pennsylvania's sound movie, "Clear Track Ahead." R. F. McCall of Motorola, Inc. showed color slides and described installations of end-to-end train phones.

On the afternoon of June 15, the superintendents traveled by special train to the Chicago & North Western's Proviso facilities, inspecting the hump and classification yard, yard office, freighthouse, and yardmaster's tower.

S. M. Gossage, assistant manager, department of personnel, of the Canadian Pacific, presided over the three-day meeting. Fred Diegtel, superintendent of the Delaware, Lackawanna & Western at Hoboken, N. J., was elected president of the association for the ensuing year.

C. I. Morton, superintendent, Seaboard Air Line, presented a progress report of a committee appointed the previous year to submit a plan for the revision of the rules for operation in centralized traffic control territory.

Diffusion Poses Supervision Problem

That superintendents can do more to get to the rank-and-file than all the "top brass" of the railroads was the opinion of Mr. Williams expressed in his luncheon address. Believing that the public holds the railroads' public relations in lower esteem than that of some other industries, principally because they do not understand the peculiar problem of dealing with a personnel scattered over far flung networks, the speaker saw, nevertheless, sufficient "romance in the railroad business" and a natural interest of the public in them to serve as a foundation for building better public relations. On the premise that the telephone system pioneered public relations in public utilities and ranks at the top of the list in this endeavor today, Mr. Williams dramatized the contrast between its supervisory problems and those of the railroad. Spending two dollars to make a telephone call, the customer contacts only one "sweet-voiced girl—that is all." Should he seek to spend two dollars on a railroad journey, however, the customer may encounter from 15 to 20 individual, scattered employees, every one of whom is a potential asset or liability to the railroad.

"If all of our 28,000 employees were public relations-conscious on the North Western, we'd have our supervisory problem licked," said Mr. Williams. He went on to say that this job is difficult because "many in-

dustries have as many employees under one roof as the North Western has on its whole system. . . . Even if, personally, I made a public relations convert out of a public-contact employee out on the line, chances are he'd be 'bumped' off the job, and we'd get another liability."

The speaker urged the superintendents to do more to encourage initiative by the employees. He said that too much technical attention to rules stultifies this necessary ingredient of good work. He stressed the importance of adequate entrance examinations for new employees, reviewing the case of a conductor "who insists on insulting the passengers." Though suspended three times, he had to be reinstated by action of the National Railroad Adjustment Board, and continues to insult passengers today.

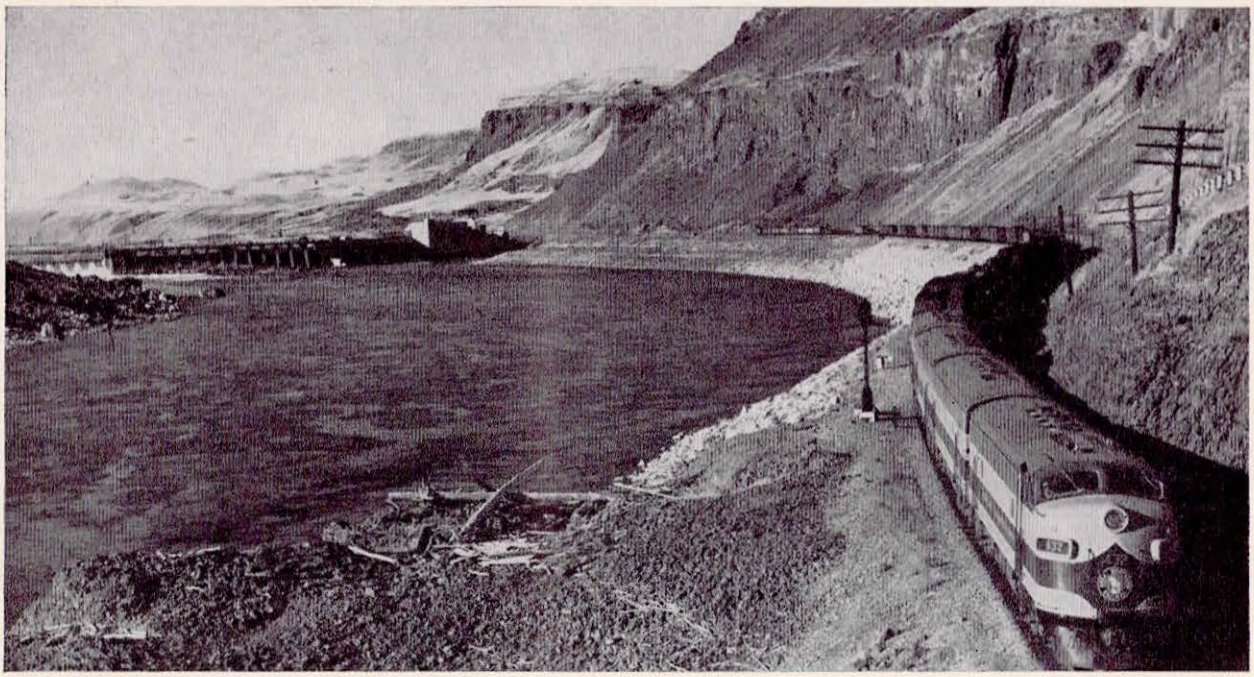
Mr. Williams wound up his talk with a discussion of contract truck carriers, which he considers the railroads' most severe competition today. Contract truckers, he said, are free to do today what brought about the enactment of the Interstate Commerce Act 60 years ago. Their freedom from regulation brings about serious discrimination against small shippers, against common carrier truckers and against the railroads. "I have cussed the common carrier truckers for 20 years; now I think we have a common enemy, and maybe we ought to join 'em."

Mr. Budd described the superintendent as the "mainspring" of the railroad, to whom is entrusted the tools of the industry—locomotives, cars, track and repair facilities. Railroading, he said, in this time of serious troubles, has never in its history faced a greater demand for better service at cheaper rates. Mr. Budd urged close attention to employee relations and public relations, pointing out the important bearing of one on the other. He charged the superintendents to be "captains of their teams, not guards on a chain gang." Subordinates, he continued, must understand their responsibility and their authority; they should volunteer suggestions and recommendations, and should be dealt with promptly, fairly and intelligently. He charged the superintendents with the duty of giving the public a "different view of your industry than they are used to. What the public thinks of us," he said, "is reflected in our treatment by public bodies—legislative, administrative and judicial."

Mr. Budd referred to the important improvements in passenger schedules in recent years, declaring that freight schedules must now be improved along the same lines. A real challange to superintendents exists, he stated, in the low average daily freight car and locomotive mileage now obtaining.

Every Employee a Potential Salesman

Mr. Horning, addressing the first evening session, considered the two biggest jobs facing a railroad superintendent today to be first, the need for better public and employee relations, and, second, the most economical application of the 40-hr. week, together with its accompanying problem of getting the right men to fill the additional jobs brought about by this change. He described the shorter work week as "the most pressing problem ever to confront the railroad industry," which, together with the seven-cent hourly wage increase granted non-operating employees, will cost the Class I railroads about $640 million a year. This makes imperative new economies to meet the added operating costs, Mr. Horning said, but this economy "must be achieved without loss of efficiency."



An eastbound Great Northern freight train in the Columbia River valley near Rock Island, Wash.

In this connection, one of the biggest obligations of the superintendent is to take advantage of the opportunity to hire the right men to fill the jobs which will be created on September first.

Mr. Horning stated that a great mass of concrete evidence indicates today that there is a direct connection between the kind of relationships a business enjoys in its home community and the degree of prosperity which that business enjoys. The superintendent is the principal officer of the railroad on his division. Running that division is running a "big business, no less than the head of the mill, mine or factory." He may be his railroad's senior resident officer in an entire state—"his management's ambassador at the state capital."

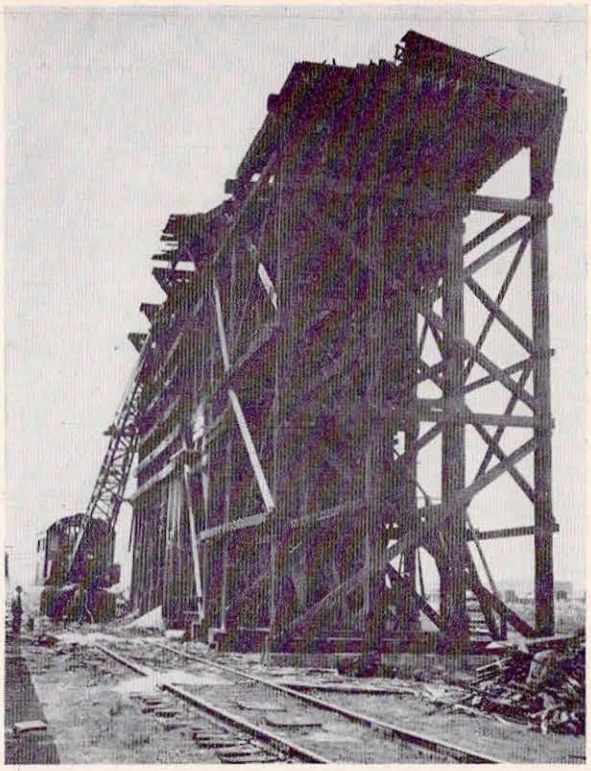
Every employee is a potential public relations asset, Mr. Horning said, and if he is shown that the future of his job and the security of his family depend upon how well he represents his railroad, and is given the facts he needs to be an effective representative, he can do much to promote understanding and fair treatment of his railroad. "That is one reason why good *employee relations* go hand in hand with good *public relations*," he explained. "Perhaps no other form of railroad supervision has such a profound effect upon the thinking of railroad employees" as does the superintendent, Mr. Horning declared. "Intermediate and lower supervision will look up to him for leadership . . . and the personal example he sets for his subordinates will initiate a chain of action, favorable or unfavorable, extending to the far reaches of his jurisdiction."

Mr. Horning described training courses in which, to date, 75,000 New York Central employees had participated, and which had swung the preponderance of letters received from customers either commending employees or registering complaints largely to the former category—almost eight to one. Part of the success of that program he attributed to the fact that it had the management's full support, "from the president right on down." Every railroad employee represents capital investment of almost $20,000, Mr. Horning stated, and it is folly to prejudice this investment by faulty administration and the failure to add to that initial outlay the "few additional dollars of expense which may be necessary to provide the wherewithal for an employee to perform creditably."

Election of Officers

Newly-elected vice-presidents of the association are: F. H. Garner, superintendent, New York Central, Chicago; C. A. Came, superintendent, Boston & Maine, Dover, N. H.; C. I. Morton, superintendent, Seaboard Air Line, Raleigh, N. C.; and F. L. Houx, superintendent, Chicago & North Western, Chicago. S. F. McGranahan, superintendent, Erie, Jersey City, N. J., was elected treasurer. Newly-elected directors are: J. C. Starbuck, assistant superintendent, Chicago, Burlington & Quincy, Chicago; B. W. Tyler, superintendent, Pennsylvania, Pittsburgh, Pa.; and J. W. Harman, terminal superintendent, Canadian Pacific, Montreal, Que. P. K. Partee, general superintendent of transportation, Baltimore & Ohio, Baltimore, Md., whose term had expired, was re-elected.

A one-day subconvention to be held at San Francisco on August 26, for the benefit of west coast members, was announced by Mr. Gossage, who will preside over the meeting.



Dieselization of an entire district permits the "writing-off" of steam locomotive facilities. The Gulf, Mobile & Ohio removed its last coaling station in the Chicago area in May, 1949

Committee Reports

Methods to Reduce Passenger Train Delays at Stations (Chairman, R. A. J. Morrison, superintendent, Baltimore & Ohio, Cumberland, Md.): This committee searched out the causes of delays to passenger trains at stations and emphasized the need for elimination of detention in excess of scheduled station time, and for on-time performance and faster schedules, particularly in view of the keen competitive situation in passenger transportation.

Improvements which the committee considered important in reducing delays at stations were: (1) physical layouts designed for the lengths of trains operated and the kind of work performed on them; (2) servicing facilities so located that locomotives and cars can be fueled, watered and lubricated at one stop; (3) station switches either power-operated or handled by other than the road crews; (4) platforms of adequate width, and properly surfaced, to permit free movement of platform equipment and passengers; (5) signals so located that enginemen have the condition of the line before them at the time they receive starting signals; (6) public address systems for directing passengers to the proper locations; and (7) electric starting signals at stations where the relay of hand signals is impaired.

Given the proper facilities, or, for that matter, where facilities are not wholly adequate, there were outlined a number of practices by which the stay of trains at stations might be minimized. The maintenance of good pressure in water lines to both engines and cars was cited as an important item in quick servicing. The location of ice and other train supplies at proper intervals along platforms to

save time in transporting them; a readily available supply of brake shoes, air hose, generator belts and similar running repair material, and also of equipment for prompt snow removal; and sufficient manpower for inspection and attention to irregularities—these were listed as essentials for freedom from detention in excess of scheduled stopping time.

The committee felt that maximum permissible speeds should be maintained into passenger terminals, and that the practice of drifting into stations where higher speeds could be safely maintained should be discouraged. Spot signs should be provided to aid engine crews in properly locating trains in relation to servicing facilities, head-end traffic and waiting passengers. Orders should be ready for crews on arrival, where possible, and handed to the engine crew members without requiring them to leave the locomotive.

Train crews should be instructed, the committee felt, to take maximum advantage of the facilities afforded them. Station announcements should be made well in advance with instructions for detraining. When train porters are available, they should begin well in advance to get hand baggage to the vestibules so as not to delay, or be delayed by, passengers in the aisles. As many exits from the train as can be properly manned should be made available. This, the committee pointed out, not only reduces detention, but keeps the passengers—most easily irked at this stage of their journeys—in a better frame of mind.

It was suggested that the best disposition of passengers through the train could be determined by studies; through passengers being loaded in certain cars and "short hauls" in others, where practicable. Use of one door for luggage and one for passengers, where vestibules are adjacent, was recommended. The committee considered it important that adequate platform help be available to speed the unloading of baggage and to aid in placing it a sufficient distance from the steps to prevent congestion.

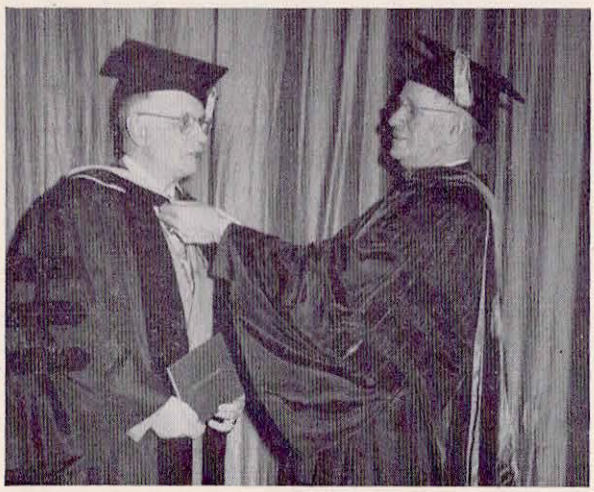
Public address systems were praised for their practicability in getting passengers to the proper location prior to train arrivals, particularly when used in connection with numbered platform locations. Advance information of wheel-chair or stretcher cases, or unusually heavy movements, was urged to aid destination stations in prompt handling. Advance handling of head-end traffic was suggested, the committee feeling that mail, express and baggage should be properly sorted on trains and stacked convenient to doorways prior to arrivals at stations, and sorted on platforms prior to train arrivals.

Where optimum handling is already in effect and delays are still encountered, and additional operating expenditures for increased personnel are not justified, the committee felt that perhaps mechanical equipment could supplant existing methods for handling head-end traffic. Unit-load shipping, wherein many small pieces are handled as one lot, was suggested as a possible remedy—the use by the Railway Express Agency of skidded canvas containers being mentioned. An advantage suggested in the unit-load method was the possibility of forwarding traffic on trains on which it is now restricted because of the inordinate time required for loading and unloading it piece by piece. The use of portable power-driven belt or gravity roller conveyors for head-end handling was discussed.

The handling of mail into and out of postal cars was discussed as one of the chief sources of passenger train delays. The Post Office Department, the committee stated, has shown its willingness to work with the railroads, and a recent letter from Deputy Second Assistant Postmaster General Miller, in which he declared that relief could be provided by renewing—with some modification—the terms of a June, 1942, agreement between the railroads and the department, was quoted in full.

The committee said that it found head-end traffic was sometimes handled on fast afternoon and evening passenger trains when it could be handled on slower trains without affecting destination deliveries, and suggested that in such cases conferences be arranged with the Railway Express Agency or postal authorities to achieve reassignment of such traffic.

In discussion following the report, a member emphasized the desirability of including in advance consist reports notations as to unusual head-end traffic and the cars in which loaded, and the location in the train of cars on which car men are needed. Delays encountered watering Diesels in the heating season, one superintendent reported, had been largely eliminated by improving the pressure in water lines. One member reported that station time on a heavy mail-carrying passenger train had been reduced from an average of 30 min. to 10 min. by the use of pallets for loading storage mail.



Arthur E. Stoddard, president of the Union Pacific, was recently awarded an honorary Doctor of Law degree by the University of Wyoming at its commencement exercises at Laramie. The presentation was made by Dr. George Duke Humphrey, president of the university

Benefits from Complete Dieselization of an Entire Division or Subdivision (Chairman R. F. Jeter, superintendent of terminals, Gulf, Mobile & Ohio, Chicago): After weighing the advantages of assigning Diesel power to "cream" runs, as compared to the grouping of Diesels for complete Dieselization of an entire division or subdivision, this committee concluded that the complete Dieselization of a sector of railroad would, ordinarily, bring about greater economies. In assigning Diesel power to the choice runs, the maximum ratio of replacement of steam power was estimated to be one to four, this ratio being reduced as Dieselization progresses until—when completed—the average displacement ratio is about one to two.

The committee enumerated more than a dozen substantial economies which might be obtained through complete Dieselization of a district, including the elimination of coaling stations, coal storage, cinder-handling equipment, water stations and treating plants, boiler work facilities, enginehouses and back shops. One reason given for the complete Dieselization of a territory was the possibility of operating it with but two types of power—utility switching locomotives and combination freight-and-passenger units—where steam operation might require the assignment of as many as seven classes of power.

The committee on reducing passenger train delays favored increased use of mechanized equipment for handling head-end traffic

The committee cited benefits which had accrued in instances where whole divisions or districts had been Dieselized. On one district with 950 mi. of track 165 steam locomotives were replaced by 100 Diesel units used in multiples of one, two and three. The district was able to abandon its back shop, six boiler-washout plants, eight mechanical cinder hoists, 44 water stations, 40 water treating plants and 17 coaling stations.

On another railroad, Dieselization of an entire division revealed that 12 Diesel locomotives of two types could do the job of 26 steam locomotives of five types. Operating costs with steam power, including fuel, water, lubrication, maintenance, wages of maintenance and train-service employees maintenance of facilities and depreciation, were $1,491,468 a year, compared with $969,996 a year with Diesel power. Dieselization of the entire division is expected to produce net savings of $521,472 a year, a net return of 15.3 per cent on the investment. Another road reported by the committee as Dieselizing a 180-mi. subdivision was able to avoid bridge strengthening which would have cost $240,000, and, at the same time, realized net savings in its mechanical and stores departments, through elimination of coal and water stations and by reduction in train-miles and yard engine-hours, totaling $589,000 a year.

In discussion following the report, Mr. Jeter expressed the thought that in general it would pay to first Dieselize the "cream" runs and then concentrate on Dieselization of an entire district. Answering a query as to what provisions should be made for standby power in a fully Dieselized district, H. E. Bixler, transportation assistant, New York, New Haven & Hartford, answered that the Diesel itself "is a standby at practically all times when it is not actually in service."

It was suggested that it would be very beneficial to the railroads if the builders would get together to standardize spare parts so as to cut the inventories and reduce the number of duplicate parts of varying designs which have to be carried in stock. G. M. Leilich superintendent, Lehigh Valley, pointed out that an important incidental saving in Diesel operation was the reduction in ballast cleaning requirements. His road had avoided an expensive tunnel relining job by the substitution of Diesel power, he reported.

Answering a question relating to slippage, E. A. Foster of Fairbanks, Morse & Co. emphasized the importance of using the ammeter as a guide to power at the rail and as a slipping indicator. Mr. Foster urged that the superintendents consider the compilation of locomotive cost statistics on a 1,000 gross-ton-mi. basis, or car-mile basis, where it is now the practice to determine only straight costs per locomotive-mile. On a medium size road, Mr. Foster said, about half of the line's back shop should adequately serve to maintain all the road power. In discussion concerning cold weather operation, Mr. Foster said that roads using "adjusted tonnages" could "throw them out the window" if they used Diesels, noting that their performance is better in low temperatures.

Defending the modern steam locomotive, A. S. Tabor, assistant superintendent, Norfolk & Western, cited that road's high gross ton-mi. per train-hour, and its average mileage per locomotive, which, he stated, exceeded that of the average for road Diesels.

In closing, the chairman pointed out that Diesels should be operated with a regular maintenance program, and that the crews who run them should be trained how to use them, in order to achieve maximum benefit from Dieselization.

Modern Methods of Communication in Train and Yard Service (Chairman B. W. Tyler, superintendent, Pennsylvania, Pittsburgh, Pa.): This committee urged that emphasis be placed on the potentials of modern communication systems for improving operations expressing the belief that, heretofore, the development of communications has been subordinated to the development of motive power, rolling stock, roadway and signaling.

The committee discussed the train phone, both the induction type and the straight space radio telephone, as applied to road operations, and estimated the average cost of equipping locomotives, cabooses and wayside stations, respectively, at $1,000 to $3,500; $1,000 to $4,000; and $1,000 to $7,500. A number of hypothetical cases were cited to demonstrate how train phone could be applied

to enhance safety speed operations and introduce economies in road operation.

In one instance cited a mechanical failure occured on a Diesel locomotive of a stock train at a point about 50 mi. from the nearest terminal. By train phone, contact was made with an assistant road foreman of engines who was riding another train over 100 mi. away. The difficulty was described, a remedy prescribed, and the locomotive was restored to full operative condition in a few minutes. An important advantage of head-end to rear-end communication, the committee said, is the ability of the rear-end men to inform the head-end men of any need to stop—instead of applying the air from the conductor's valve—minimizing the likelihood of break-in-two's and consequent hazards.

"New uses are being made of the facilities daily," the committee stated, "many by necessity as the occasion or emergency arises—some by chance but mainly because employees, having the equipment at hand for their use, are making the most of it to promote safety and expedite the movement of their trains." The committee described the train phone as a "great morale builder." As a sidelight to its important applications, an instance was cited where a thoughtful train dispatcher reached crews en route on Christmas by train phone and arranged to notify their families the approximate time their trains would reach the home terminal.

Yard operations, described by the committee as "the greatest stumbling block to fast freight movement on the railroad," stand to gain considerably from application of modern communications—loud-speaker systems and talk-backs, interoffice communications, radio and teletype. All of these can be employed, the committee pointed out, to speed yard operations through advance notice of arrivals, expedited transmission of waybills, train consists and cut slips, and prompt notification of changes or irregularities.

The application of modern communications to passenger terminals was outlined. The use of public address systems for directing passengers and calling maintenance men was described as highly useful.

The committee speculated on the possibilities of television, beamed on fixed points, as an adjunct to the overall communication system, and touched on the feasibility of more efficient car record information, using punched cards for the automatic transmission of consists. This equipment, the committee stated, even presents the possibility of the elimination of the present freight bill and waybill by having the billing agent cut a card at origin, which would travel with the car, being used for the automatic preparation of reports wherever required.

Mr. Triem cited the need for the simplification of operating rules to coincide with present-day conditions wherein a "telephone blanket"—employing the common wire phone, inductive phone systems and space radio—provides almost constant contact between the operators and the enginemen and conductors of trains on the road. The concept of some of the rules, he said, based on the assumption that a train is "lost" from one open station to the next, is no longer applicable where modern communications are in use, and, under those rules, automatic block signals can serve no function other than the spacing of trains. Describing the favorable results the Pennsylvania has obtained with the use of inductive train phones in locomotives and cabin cars, and at wayside stations, Mr. Triem disclosed that in a recent three-day check on each of 700 individual installations, there had been an average of 600 calls, almost 300 of which had resulted in better train movement or the prevention of tie-ups.

Mr. McCall described the application of train phones in specific road and yard installations. He stated that it is entirely possible to start end-to-end train phones on a small scale, perhaps applying the equipment to only a few individual trains, using that initial installation as a base for eventual expansion to all engines, cabooses and wayside facilities in a territory.

New Ideas on Reducing Loss and Damage (Chairman W. A. Moffitt, superintendent of agencies, Chesapeake & Ohio, Huntington, W. Va.): Man-failure is the greatest problem to be overcome in achieving an improvement in the loss and damage situation, this committee reported, "and progress can be attained only through training, education and intelligent supervision." Partly to blame for the mounting claims bill, the committee said, is "our failure to carry out ideas and suggestions by the various organizations handling freight claim prevention work." To insure success, there must first l. set up an organization to "carry through" from top management down to the freighthouse foreman.

The committee stated that new ideas were not so essential as proper emphasis on some of the old ones, pointing out that every pound of l. c. l. freight handled in this country is first accepted by some agent of the railroad who has an opportunity to detect faulty marking, inadequate shipping containers, or inaccurate descriptions. While rough handling was cited as one cause for damage, improper stowage was considered an even greater cause for damaged ladings.

Training programs and educational classes in the various departments were deemed all-important. The committee felt that it should be brought to the attention of all employees and their supervisors that the cost of loss and damage has to be borne by the carriers, and eventually enters into the rates charged, so encouraging diversion of traffic and jeopardizing the security of the railroad workers' livelihood.

The committee acknowledged that much improvement could be ascribed to mechanized freight-handling equipment, but insisted that proper training in the operation of this equipment could bring about further gains.

Ideas discussed as new—or at least limited in application up to now—included the use of special-device cars designed for improved stowage and weight distribution to prevent shifting and crushing; the use of bulkheads to accomplish the same objective; ballots and veri-checks to assist in the correct loading of l. c. l.; the institution of programs whereby merchandise unloading reports are furnished loading agents; establishment of subcommittees to the regional claim conference committees to stimulate interest in the safe handling of cars; increased use of impact-recording devices; better instructions to achieve uniformity in the transmission of hand and lantern signals to engine crews; and more extensive use of visual aids at claim prevention meetings.

The committee discussed a plan for training switchmen in governing switching speeds by painting a white mark on the side of the rail on switching leads at 100-ft. intervals, with an electrically lighted board showing the miles per hour based on the seconds consumed. The committee suggested the possibility of a centralized agency to handle bulkhead returns in much the manner that grain doors are currently handled.

In discussing the report, it was pointed out that the reluctance of agents to refuse improperly packed freight—while often well intended—is more likely to have an adverse than a favorable effect on traffic. One superintendent declared that his road found shippers grateful for advice as to poorly packaged shipments, and stated that even when pick-up drivers had already accepted shipments, his road had found shippers grateful for telephone advice, and usually willing to take corrective action before letting the freight go forward.

Two roads reported successful use of pallets in handling pick-up freight from shippers' platforms to the freighthouse and outbound cars, reporting a reduction in loss and damage, improved loading time, and the conservation of platform space. The empty pallets are returned by the pick-up trucks

on subsequent trips. One superintendent, expressing the belief that rough handling was the biggest factor in loss and damage, advocated wider use of impact recorders so that the points of rough handling could be isolated. Photographs of damaged cars were considered of great aid in fixing the cause of losses. Where they indicate misloading, they can be sent back to origin agents. Where rough handling is indicated, they can be shown to switchmen.

J. Marshall, retired representative of the Freight Claim Division of the Association of American Railroads, pointed out that loss and damage is one of the few places where the railroads can hope to reduce their expenses; "somebody else increases all their other expenses." The switchmen want to do a good job, he declared, and will if they are given a well-loaded car, with a clean triple valve and a good draft gear, good track and a clean yard.

The Superintendent's Responsibilty in Fostering Better Understanding Between Employees and Management (Chairman, W. G. White, general superintendent, Delaware, Lackawanna & Western, New York): "The crux of the problem of management-employee relations lies in the relation of the individual employee with his immediate supervisor," this committee reported, "and the most important thing a superintendent has to do" is to train and develop an "adequate first line supervision." The superintendent, the committee stated, by instilling in his supervisory force the attitude of respect for the individual employee, can lay the foundation of sound employee relations. If an employee does not have confidence that he will receive fair and considerate treatment from his superiors, he will seek security against arbitrary action by other means, often detrimental to cooperation.

The superintendent's responsibility is the creation and maintenance of day-to-day relationships between his supervisory force and the workers that will promote satisfaction of the fundamental desires of the employees and secure their cooperation in achieving the objectives of management. The committee recommended that superintendents, in handling grievances, attempt to have them settled at the lowest level possible, but without interfering with the right of higher appeal. The interpretation of working schedules was said to be a principal cause of grievances, and the committee suggested that superintendents assure themselves that their decisions will not have to be overruled. Handling grievances "the easy way" was criticized as a practice productive of disrespect.

The diligent administration of discipline was cited as one of the best avenues of favorably influencing employee attitude toward company policies. Discipline should be constructive, the committee stated; any feeling among employees that an investigation is perfunctory, it pointed out, is "fatal" to good relations. The committee felt that the actual assessment of discipline should be handled directly with the employee by his immediate supervisor "on a man-to-man basis."

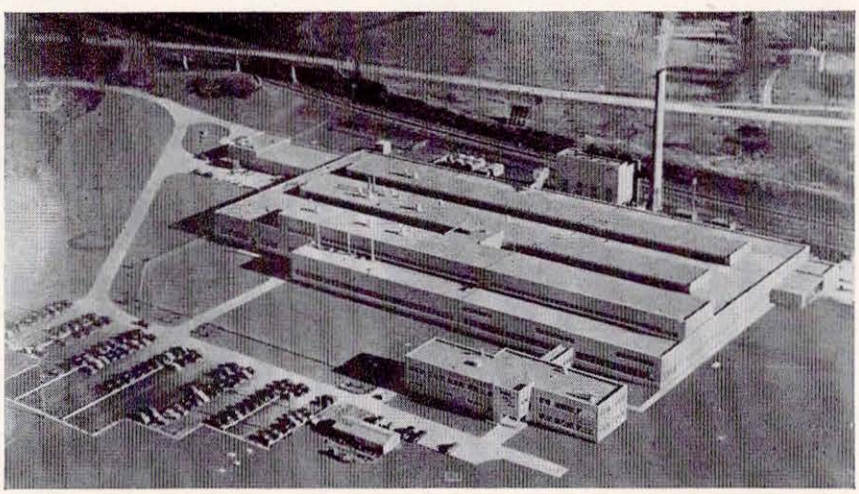
Superintendents were urged to take a constructive attitude toward social activities, such as Y.M.C.A.'s, veterans' associations, and athletic groups, supporting projects which provide an opportunity for employee cooperation and leadership, but limiting personal participation to honorary positions. Suggestion systems were considered of worth only in proportion to the spirit in which they were sponsored. Cash awards should be based on reward for cooperation rather than the "purchase of ideas." The committee felt that "if an ideal relationship existed between supervisor and employee," suggestion programs would probably be superfluous, but that lacking such harmony they are a valuable channel for information from employee to employer, encouraging cooperation and bestowing recognition therefor.

The committee reported that some outside industries have made outstanding progress in improving employee understanding of management's problems by devising programs to keep supervisors informed, and suggested that contacts with local industries might be helpful in the development of similar programs on the railroads. Employee magazines, letters to employees, management-employee forums, pamphlets on management problems, and reports on financial results were suggested as employee morale builders.

The committee emphasized the importance of handling employee relation problems by line, rather than staff, officers, wherever possible, and regarded centralized personnel departments as most valuable for the *guidance* of line officers, rather than for the direct handling of divisional problems.

Good public relations and good employee relations were described as having an important bearing on each other. The success of supervisors in dealing with employees, the committee declared, reflects faithfully the treatment accorded the supervisors by the superintendent.

In discussion following the report, the need was stressed for keeping open to the men in the ranks an avenue for promotion, and the importance of "taking inventory" of potential supervisory personnel. One superintendent described the effectiveness of the Army practice of requiring officers to submit periodic "fitness" reports on their subordinates, a practice which makes compulsory a regular survey of human resources, and which tends to keep subordinates "on their toes."



The American Brake Shoe Company's National Bearing Division non-ferrous foundry at Meadville, Pa., covers nearly four and one-half acres under one roof. The plant is complete with pattern shop and laboratories. The melting capacity is 200,000 lb. of copper and alloys a day. Mechanization and high-capacity ventilation system insure good working conditions.

Burlington Saves Money With Visible Records

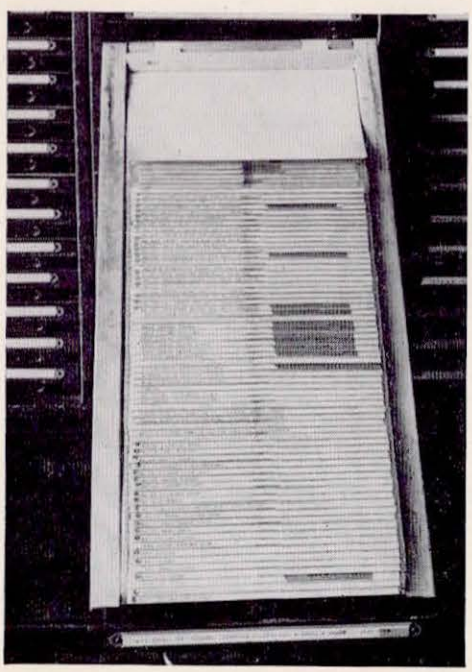
Aurora general store cuts inventory adjustments — Material conservation is improved — Paper consumption cut down

Daily savings of many man-hours, a large reduction in expenditures for paper used, and other advantages more difficult to measure accurately in dollars and cents have accrued to the stores department of the Chicago, Burlington & Quincy through the use, at its Aurora, Ill., storehouse, of a visible record system in place of the old-type stock book. Since this system was adopted several years ago, it has been necessary to take stock only four times yearly, and as a consequence the stockkeeper has time to do other work, and particularly to give closer attention to the regular routine operations going on in his section. To this fact Burlington stores officers attribute much of their success in reducing inventory adjustments at year end, and better conservation of material—including a decrease in the amount of obsolescent material held.

The record system used at Aurora is based on two different cards, which are placed on panels and housed in cabinets, 15 panels to the cabinet, 67 items to the panel. One card is the regular stock card shown in Fig. 1. The other is a strike-off card, sometimes known as a running or perpetual inventory card (illustrated in Fig. 2). The colored signals (see Fig. 3) serve several purposes, but are particularly useful whenever ordering is necessary. One indicates the firm from which an article is to be ordered. Thus all items to be obtained from one firm, regardless of class, have the same color indicator. The color flag at the right shows whether the order is to be on the purchasing agent or on one of the company shops, and also can be used to indicate surpluses or low stock (extreme right).

These colored signals play a large part in achieving the savings secured with this procedure, mainly through reducing the amount of reordering necessary. Prior to the installation of this visible record system, the general store at Aurora, upon receipt of a requisition from one of the outlying stores, would order on the purchasing agent if necessary. Once the general store's requisition had reached the general storekeeper the latter generally had to rewrite the order so that only items to be ordered from one source of supply appeared on any one purchase order.

The process of retyping orders alone used to require two typists on a full time basis. Under the present system reordering has been cut to a part-time job for one typist. This has been made possible merely by putting the distinctive color markings in the lower left corner of the cards. (These are visible at any time the card tray is pulled out.) When the stockkeeper has decided to order he merely sets the flag at the right hand side of the card to indicate whether he is ordering on the purchasing agent or on one of the company shops. He then removes the whole tray from its cabinet and sends it to the order clerk. The typist making up the requisi-



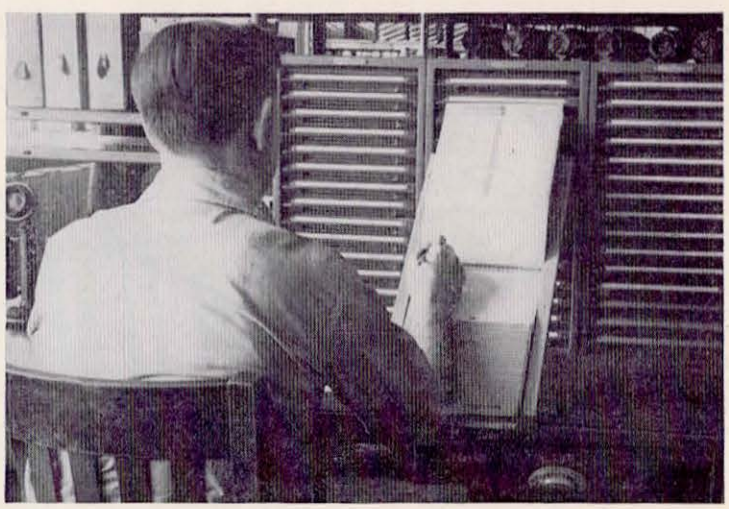
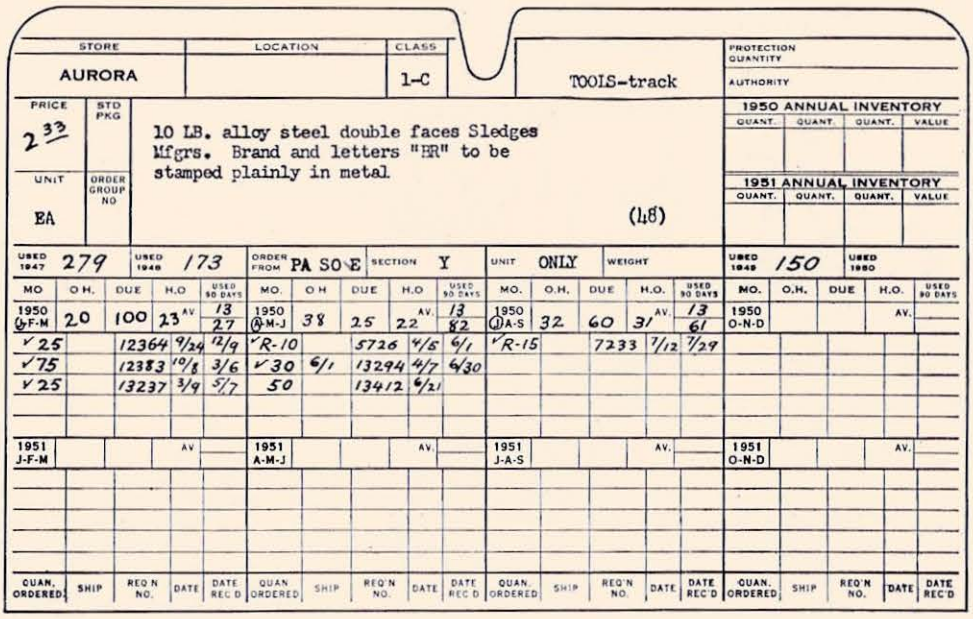


Fig. 3—A tray or panel of the visible records. Colored dots at left indicate items which are bought from a particular supplier. Signal at right indicates whether order is to be on various Burlington shops or on the purchasing agent

Fig. 4—Stockman posting to visible record. Upper half is stock card and lower is strike-off card



STORE: AURORA | LOCATION: | CLASS: 1-C | TOOLS-track | PROTECTION QUANTITY: | AUTHORITY:

PRICE: 2.33 | STD PKG: | UNIT: EA | ORDER GROUP NO:

10 LB. alloy steel double faces Sledges Mfgrs. Brand and letters "HR" to be stamped plainly in metal (48)

1950 ANNUAL INVENTORY — QUANT. | QUANT. | QUANT. | VALUE

1951 ANNUAL INVENTORY — QUANT. | QUANT. | QUANT. | VALUE

USED 1947: 279 | USED 1948: 173 | ORDER FROM: PA SO E | SECTION: Y | UNIT: ONLY | WEIGHT | USED 1949: 150 | USED 1950:

MO	O.H.	DUE	H.O	AV	USED 90 DAYS
1950 J-F-M	20	100	23	AV 13	USED 90 DAYS 27
✓25		12364	9/24		12/9
✓75		12383	10/8		3/6
✓25		13237	3/9		5/7
1951 J-F-M				AV	

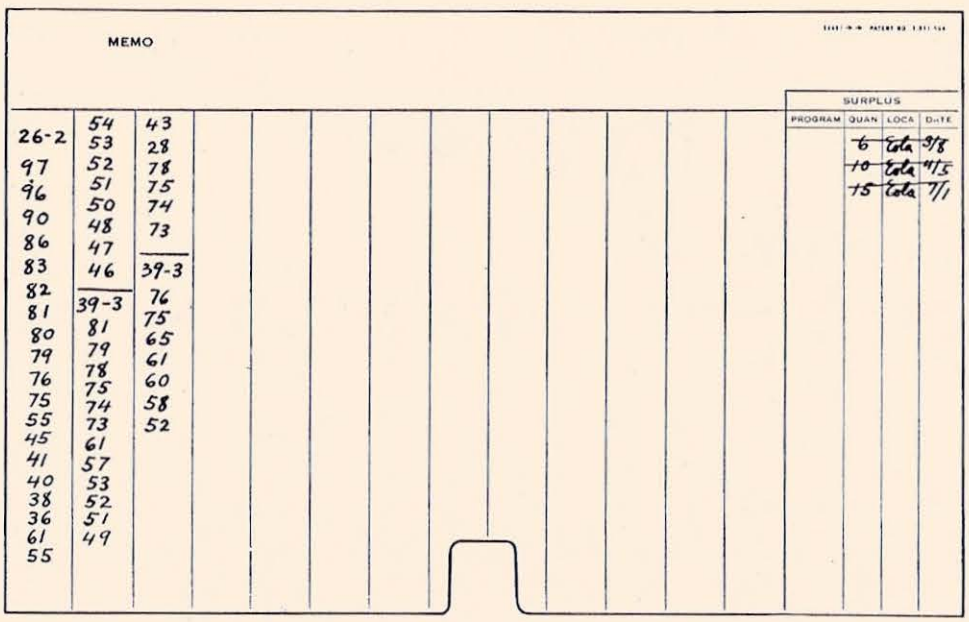
MO.	O H	DUE	H.O	AV	USED 90 DAYS
1950 A-M-J	38	25	22	AV 13	USED 90 DAYS 82
✓R-10		5726	4/6		6/1
✓30	6/1	13294	4/7		4/30
50		13412	6/21		
1951 A-M-J				AV	

MO.	O.H.	DUE	H.O.	AV	USED 90 DAYS
1950 A-S	32	60	31	AV 13	USED 90 DAYS 61
✓R-15		7233	7/12		7/29
1951 J-A-S				AV	

MO.	O.H.	DUE	H.O.	AV	USED 90 DAYS
1950 O-N-D				AV	
1951 O-N-D				AV	

QUAN. ORDERED	SHIP	REQ'N NO.	DATE	DATE REC'D

Fig. 1—Each side of the stock card contains record for two years



MEMO

SURPLUS — PROGRAM | QUAN | LOCA | DATE

26-2	54	43
97	53	28
96	52	78
90	51	75
86	50	74
83	48	73
82	47	
81	46	39-3
80	39-3	76
79	81	75
76	79	65
75	78	61
55	75	60
45	74	58
41	73	52
40	61	
38	57	
36	53	
61	52	
55	51	
	49	

SURPLUS: 6 Cola 3/8 | 10 Cola 4/15 | 15 Cola 7/1

Fig. 2—The so-called running or perpetual inventory is kept on a strike-off card

tion can tell at a glance from the flags on right sides what items are to be ordered, while the indicator at the left tells her which items go on any one purchase order. After typing an item on the order she moves the flag back to "neutral."

At the time this system was adopted, the Burlington stopped numbering stock book pages. Items are now filed alphabetically in material classes and sub-classes. This has meant notable savings in time and paper by making unnecessary the frequent issuing of complete new sets of pages in classes where additions and deletions come fast, as in class 26, Diesel parts. Also eliminated are confusing page numbers, such as 186-A and 186-AA.

This type of stock record aids considerably in conserving materials for the Burlington. Just a glance at his record gives the stockkeeper the essential facts he needs: (1) Average consumption over a period of not less than two years and average consumption for at least 90 days of the current year; and (2) the rate at which that material presently is being used. Thus, if consumption is far above average, or seasonal average on items which are consumed mainly during the summer or winter, he can immediately bring this matter to the attention of the storekeeper who can take it up with the using department. At the same time, these records aid in spotting quickly items which are becoming obsolescent and the stores department may be able to get rid of them, or take any other course deemed advisable. This eliminates many chances of articles becoming obsolete while the stores department has a large stock on hand.

A. K. Galloway
Chairman

V. R. Hawthorne
Executive Vice-Chairman

The sessions of this year's meeting of the Mechanical Division of the Association of American Railroads, which is the twenty-third annual meeting, will be held in the Gold Room of the Congress Hotel, Chicago, June 27, 28 and 29.

MECHANICAL DIVISION

The first day's session will convene at 10:00 a.m. and the second and third days' sessions will convene at 9:30 a.m. The hours given for the start of the sessions are Chicago Daylight Saving Time, which is one hour faster than Central Standard Time.

During the progress of the three-day sessions there will be five addresses and 15 committee reports will be presented. The general business of the division will be taken up at the first day's session and the election of General Committee members and Nominating Committee members will be held on the last day of the meeting.

PROGRAM

Monday, June 27 (10:00 a.m.)

Address by G. Metzman, president, New York Central System
Address by J. H. Aydelott, vice-president, Operations and Maintenance Department, A.A.R.
Address by W. J. Patterson, member of the Interstate Commerce Commission
Address by A. K. Galloway, chairman of the Mechanical Division and general superintendent motive power and equipment, Baltimore & Ohio
Action on Minutes of 1948 Annual Meeting
Appointment of Committees on Subjects, Resolutions
Unfinished business
New business
Report of the General Committee

PROGRAMS

P. & S. DIVISION

Beginning Monday, June 27, and continuing through Wednesday, June 29, the Purchases and Stores Division of the Association of American Railroads, will hold its annual meeting. The scene will again be the Grand Ballroom of Chicago's Palmer House. A program of 15 committee reports and 5 addresses covering a wide variety of subjects has been arranged and promises much in the way of interest and information for those in attendance. All morning sessions will begin at 10:00 a.m. and run until 12:30 p.m., except on Wednesday when the morning meeting will be continued until all business has been disposed of. Afternoon sessions will convene at 2:00 p.m.

H. E. Warren
Chairman

W. J. Farrell, Executive
Vice-Chairman

PROGRAM

Monday, June 27

Call to order by Chairman H. E. Warren, vice-president, purchases and stores, Gulf, Mobile & Ohio
Invocation
Address: I. B. Tigrett, president, Gulf, Mobile & Ohio
Address: J. H. Aydelott, vice-president, Operations and Maintenance Department, Association of American Railroads
Communications
Appointment of Committees. (Resolutions and Memorials)
Action on Minutes of 1948 Annual Meeting
Report of General Committee
Reports of:
- Subject 1—Purchasing and Stores Department Manual—Recommended Rules and Practices; C. D. Longsdorf (chairman), general storekeeper, New York Central
- Subject 2—Standard Material Classification; F. J. McNulty (chairman), assistant to general storekeeper, Boston & Maine
- Subject 5—Forest Products; C. S. Burt (chairman), assistant to vice-president, purchases and stores, Illinois Central
- Subject 9—Fuel—Coal, Fuel Oil and Diesel Fuel Oil; E. S. Bonnet (chairman), fuel purchasing agent, New York Central

Address: Admiral H. B. Miller, director, department of of information, American Petroleum Institute
Reports of:
- Subject 3—Scrap Handling and Preparation—Classification and Sale; R. E. Godley (chair-

Report of the Nominating Committee
Discussion of reports on:
- Locomotive Construction, H. H. Lanning (chairman), mechanical engineer, Atchison, Topeka & Santa Fe
- Steam and Electric Locomotives Section, E. L. Bachman, (vice-chairman), general superintendent motive power, Pennsylvania
- Diesel Locomotive Section, A. G. Hoppe (vice-chairman), general superintendent locomotive and car department, Chicago, Milwaukee, St. Paul & Pacific
- Gas Turbine Locomotive Section, H. C. Wyatt (vice-chairman), assistant general superintendent motive power, Norfolk & Western

Tuesday, June 28 (9:30 a.m.)

Address by J. E. Goodwin, vice-president and executive assistant to president, Chicago & North Western
Discussion of reports on:
- Arbitration, J. P. Morris (chairman), assistant to vice-president, Atchison, Topeka & Santa Fe
- Prices for Labor and Materials, T. J. Boring (chairman), general foreman, M.C.B. Clearing House, Pennsylvania
- Brakes and Brake Equipment, J. P. Lantelme (chairman), general foreman, Pennsylvania
- Geared Hand Brakes, E. P. Moses (chairman), engineer rolling stock, New York Central System
- Loading Rules, W. B. Moir (chairman), chief car inspector, Pennsylvania
- Specifications for Materials, H. G. Miller (chairman), mechanical engineer, Chicago, Milwaukee, St. Paul & Pacific.
- Couplers and Draft Gears, H. W. Faus (chairman), engineer motive power, New York Central System
- Lubrication of Cars and Locomotives, R. E. Coughlan (chairman), chief metallurgist and engineer tests, Chicago & North Western
- Development of Hot Box Alarm Devices, J. R. Jackson (chairman), mechanical engineer, Baltimore & Ohio
- Safety Appliances, R. G. Henley (chairman), general superintendent motive power, Norfolk & Western

Wednesday, June 29 (9:30 a.m.)

Discussion of reports on:
- Tanks Cars, R. D. Bryan (chairman), mechanical assistant, Atchison, Topeka & Santa Fe
- Wheels, E. E. Chapman (chairman), mechanical assistant, Atchison, Topeka & Santa Fe
- Car Construction, L. H. Kueck (chairman), assistant chief mechanical officer, Missouri Pacific

Election of members of General Committe and Committee on Nominations
Report of Committee on Resolutions.

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man), assistant manager of stores, Illinois Central
- Subject 3A—General Reclamation; John Voorhies (chairman), superintendent, scrap and reclamation, New York Central
- Subject 8—Shop Manufacturing; C. R. Wheeler (chairman), division storekeeper, Baltimore & Ohio

Tuesday, June 28

Annual Essay Contest Committee; B. T. Adams (chairman), general storekeeper, Illinois Central
Report of:
- Subject 12—Purchasing Department—Organization and Procedure; S. R. Secor (chairman), assistant general purchasing agent, Chesapeake & Ohio

Address: J. E. Goodwin, vice-president and executive assistant to president, Chicago & North Western
Reports of:
- Subject 13—Stationery and Printing; G. W. Kendall (chairman), stationery buyer, Atchison, Topeka & Santa Fe
- Subject 14—Fire Prevention, Safety Practices, Insurance—Purchasing and Stores Department; E. J. Urtel (chairman), division storekeeper, Baltimore & Ohio
- Subject 15—Storage and Material Handling Facilities—Capacity Loading and Prompt Handling of Company Material Cars; E. G. Roberts (chairman), stores manager, Chicago, Rock Island & Pacific
- Subject 16—Simplification and Standardization of Stores Stock; R. W. Hall (chairman), traveling storekeeper, Louisville & Nashville

Remarks: W. S. Morehead, manager of stores, Illinois Central: "The Importance of Re-Application of the Recommendations of the Division"
Report of:
- Subject 37—Stores Department—Organization and Procedure; W. W. Shugarts (chairman), assistant stores manager, Pennsylvania

Wednesday, June 29

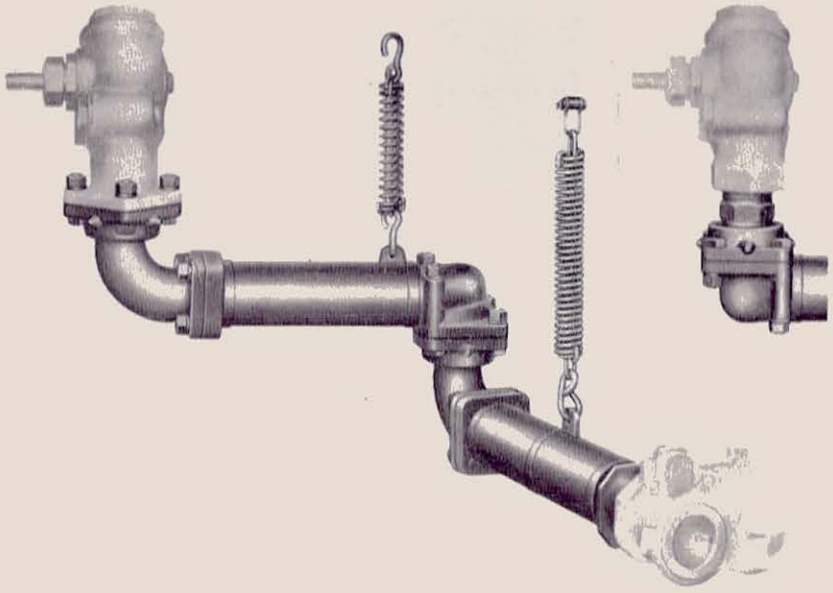
Reports of:
- Subject 42—Diesel Locomotive Parts—Purchasing and Storekeeping; A. G. Bohorfoush, (chairman), assistant general purchasing agent, Southern
- Subject 40—Loss and Damage Prevention—Salvage Disposition; J. L. Layton (chairman), stores inspector, Pennsylvania

Address: Lewis Pilcher, executive vice-chairman, Freight Claim Division, A.A.R.
- Subject 34—Maintenance of Way and Construction Materials (Including Signal, Telephone and Telegraph)—Purchasing, Storing and Distribution; E. Bartos (chairman), general traveling storekeeper, Atchison, Topeka & Santa Fe

Reports of:
- Resolutions Committee
- Memorials Committee
- Nominating Committee

Election of Officers.

New and Improved Products of the Manufacturers



Barco Type FT-3W 2½-in. steam heat connection for passenger cars and Diesel and electric locomotives equipped with flanged end valves—The insert shows how Type FT-2W connection is applied to threaded end valves

LIGHTER STEAM-HEAT CONNECTIONS

The Barco Manufacturing Company, Chicago, has developed within the last year and placed on the market a new 2-½-in. steam-heat connection for passenger cars, and for Diesel and electric locomotives, which is approximately 30 lb. lighter than previous designs, embodies all-steel welded construction with unrestricted flow, and eliminates heavy castings and all pipe threads in the connection. There are only two joints or moving points per connection in place of the usual four, thus minimizing the parts subject to repair and replacement. All wearing parts are hardened-steel, chromium-plated.

There are only two wearing gaskets per connection and these are interchangeable on all 2-in. and 2½-in. Barco connections, thus simplifying the stock inventory. This is the same type of gasket which is reported to have given reliable service on railroad equipment for many years.

The new Barco steam-heat connections are applied and removed from the end valve without dismantling by means of either a threaded or a flanged and bolted joint, whichever is preferred. They are designed for simplicity and ease of handling in shops and coach yards. Besides light weight and relatively few parts, an additional feature is exceptional flexibility due to the familiar Barco combination swivel and ball-joint construction which permits movement in every direction. Insulation of the connections is optional. If specified, it is effective and carefully protected by metal covers which assure long life.

Standard dimensions are 18⅝ in. between joint centers and 27½ in. between the center of the lower joint and the face of the coupler head gasket, as recommended by the Association of American Railroads, but these dimensions may be varied to suit individual requirements. The length of the support-spring and the safety-spring arrangements may also be varied as required.

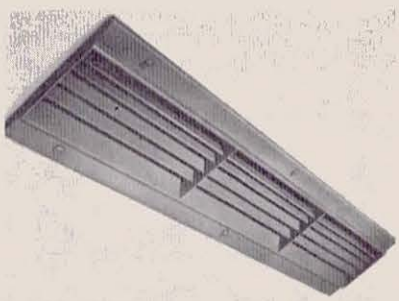
STRAIGHT-LINE ASPIRATING DIFFUSER

A straight-line aspirating air diffuser, designed primarily for installations requiring long rectangular units, such as railroad cars, has been developed by Anemostat Corporation of America, 10 East Thirty-ninth street, New York.

The standard length of the straight-line diffuser unit is 60 in., although this dimension will be varied by the manufacturer to suit the user's needs. Air quantities handled are 15 to 20 cu. ft. per min. for each foot of diffuser length, and a double row provides up to 40 cu. ft. per min. Tip velocities are about 700 ft. per min. through the valving arrangement, when handling design air quantities. The maximum static resistance is 0.2 in. of water.

Air distribution is equalized throughout the length of the straight-line diffuser installation by means of adjustable volume shutters which are accessible on the face side of the unit. The shutters can be adjusted along every foot of the outlet, and the air is controlled to every inch of the diffuser. Thus, air distribution can be equalized from end to end, regardless of overall length. The diffuser is fabricated so as to facilitate its use in individual panels of varied lengths, or it can be assembled in continuous extended strips. Many combinations are obtainable, with or without continuous or individual lighting fixtures. Units may be mounted back-to-back to form one diffuser, or may be separated to accommodate all types of lighting arrangements.

Like the circular Anemostat air diffuser, the straight-line diffuser provides up to 40 per cent aspirating action. Within the diffuser, 40 cu. ft. of room air is



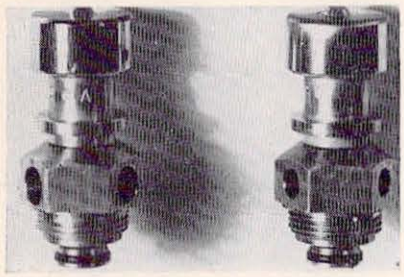
drawn in and mixed with every 100 cu. ft. of incoming duct air before the mixture is released to the enclosure. By means of this aspirating action, temperature equalization is accomplished well above the occupied zone. Expansion of the supply air through the air diffuser immediately reduces velocities, so that occupied-zone air movement of 40 ft. per min. or less may be maintained.

In a typical railroad car having an open space 60 ft. long, a double-row installation of the new straight-line diffusers will handle up to 2,400 cu. ft. per min. without draft and with complete temperature equalization throughout the space.

DESIGN CHANGES IN CAR HEATING VALVES

Two engineering changes have been incorporated in the solenoid steam admission valves No. 1671 CC and 1675 CC manufactured by the Vapor Heating Corporation, Chicago to improve operation and reduce maintenance of these devices. A steam-resistant O ring, made of a tough synthetic material, has been added to the lower portion of the stainless-steel needle in the needle-valve assembly; this O ring improves the steam-tight closing of the valve, making it unnecessary to lap-in, and permitting easy replacement.

A ball-bearing check valve has also



been incorporated in the trap portion of these valves to lessen the possibility of a vacuum keeping the valve from operating properly. These improvements make it possible to reduce the steam pressure in coach and overhead heating system, and to reduce steam pressure from twelve down to three pounds in multiple-room sleeping cars.

CORROSION-RESISTANT STAINLESS-CLAD STEEL

A corrosion-resistant stainless-clad steel is being manufactured and marketed under the trade-mark Permaclad by the Alan Wood Steel Company, Conshohocken, Pa. The sheets consist of a layer of stainless steel inseparably diffusion-welded to a mild-steel backing. The result is a sheet with maximum corrosion resistance on one side, yet which possesses the ductility and other physical properties of plain carbon steel.

Permaclad can be metal-arc-welded, spot-welded or soldered. The conductivity of the mild-steel backing dissipates welding heat and minimizes the danger of destroying stainless properties. Polished Permaclad can be drawn or stamped without injury to its surface if protected with one of several plastic coatings available.

The stainless layer is 10 per cent of the total thickness of sheets of No. 13 gage and heavier, and 20 per cent of the thickness of lighter sheets. The percentage of cladding, however, can be increased as desired, and special types of stainless or stabilized grades can be furnished to meet unusual corrosion conditions. All can be supplied polished or unpolished as specified. Special types of backing steels are also available, including AW Dynalloy high-strength low-alloy steel.

HEATING SYSTEM FOR REFRIGERATOR CARS

A thermostatically controlled method embodying an underslung automatic-feeding charcoal heater for heating cars carrying perishable products has been developed by Luminator, Inc., 120 North Peoria street, Chicago 80. This is manufactured under license from Robert Mitchell Company, Montreal, Que.

Over 5,000 of these heaters have been in use in Canada since before the war on a manually controlled basis and have given excellent service on both the Canadian National and the Canadian Pacific. Some of the American installations contain a thermostat which eliminates the need for manual control on the road.

The Luminator-Mitchell heater is fired by charcoal which is fed into a magazine of 50 lb. capacity, from which it automatically drops by gravity at the proper rate into a burning chamber which is surrounded by a copper coil. The copper coil contains ethylene glycol antifreeze solution which is warmed and circulated through a piping system over the floor of the car and which returns to the coil in the burning chamber to be rewarmed. The chimney arrangement and damper controls deliver a balanced air intake and air outlet. The difference between top and bottom temperatures in the car can normally be held within about two degrees.

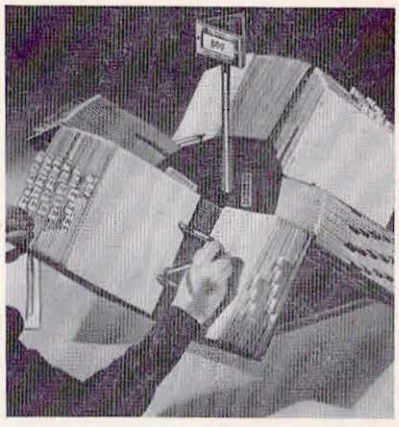
A thermostatic control has been developed for use with the heater. A three-way valve adjacent to the heater is actuated by a bulb located inside the car. When the temperature within the car is below that set on the thermostat, the flow of warm liquid is from the heater through the valve into the car and back to the heater. When car temperature is above that set on thermostat, the warmed liquid flow is from heater through valve through heat exchanger and back to heater.

With this control the thermostat is set for the desired temperature within the car and the heater is lighted. It is refueled at approximately 24- to 48-hour intervals from the ground outside the car. The inside of the car will remain within about two degrees of the indicated temperature setting. The air within the bunkers remains unchanged.

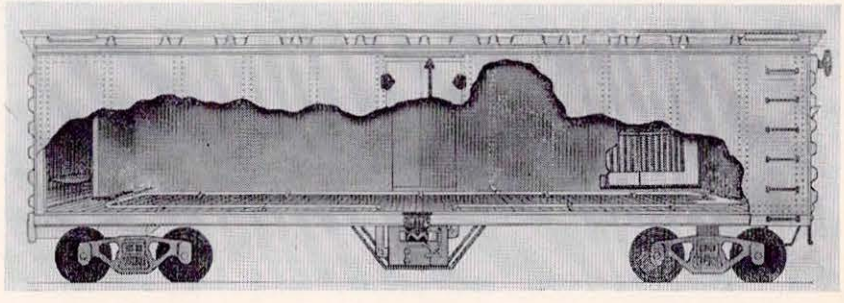
Aside from the improved servicing conditions which the underbody heater offers as compared with portable bunker heaters, it simplifies conversion from refrigerating to heating service, sometimes required within the limits of a single trip. Instead of the tedious job of chopping out the ice remaining in the bunkers, it is only necessary to light the heater, which will melt the ice and protect the load from freezing.

FILE ROTATES HORIZONTALLY

A rotary file which revolves in a horizontal plane, which is said to put all records in a natural position for posting or



reference without removal from the rotor, has just been announced by Diebold, Inc., Canton 2, Ohio. The small work units make it possible for more than one



person to use these records at any given time. Each file holds up to 2,700 records. Both the tops and bottoms are exposed for signalling purposes.

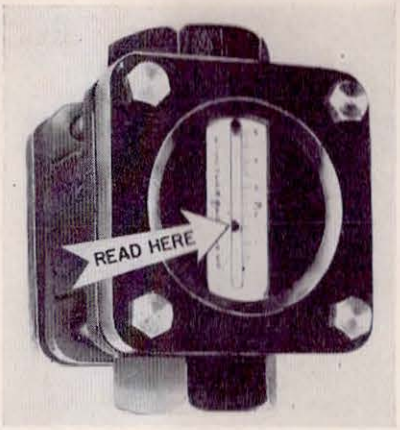
Records are housed on three movable trays. These trays are self-supporting when off the rotor. Records of various sizes up to 8 in. by 8 in., or 9 in. by 5½ in. can be accommodated on this all-steel file. This unit is called the "Cardineer."

FLOW INDICATOR FOR ALL FUEL OILS

A flow indicator suitable for both clear and opaque streams is offered by Fischer & Porter Co., Hatboro, Pa. Known as the Magna-Sight flow guide, it uses the company's standard bull's-eye body with a fixed diameter orifice at its vertical inlet. A tapered plug is suspended in the fluid stream within the orifice. There is a permanent magnet imbedded in the tapered plug which causes an external steel ball to move against a calibrated flow scale when an increasing flow rate causes the plug to rise. The rear enclosure is a heavy Herculite glass window which permits visual observation of the fluid.

The flow guide is made in eight sizes from ¾ in. to 4 in., screwed or flanged. The various models together will measure maximum flow rates from 3.5 to 250 gal. per min. The minimum measurable flow rate for any given indicator is one-tenth the maximum.

The Magna-Sight flow guide is made of iron, steel, brass, bronze and stainless

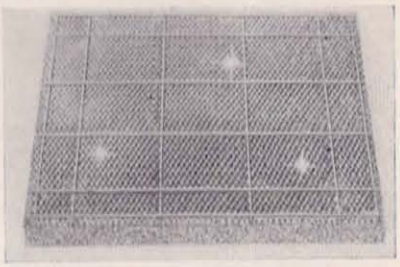


steel. It has just one moving part in the fluid stream and fits into a vertical section of pipe.

CLEANABLE METAL-MEDIA AIR FILTERS

The filter media employed in the "Alumaloy" series of air filters produced by the Research Products Corporation, Madison 10, Wis., consists of multiple layers of lightweight, corrosion-resistant expanded Alumaloy sheets, staggered to provide a baffle pattern of adhesive-coated, dust-holding surfaces. This baffle-pattern creates a turbulence in the air stream to scrub the dust, soot, pollen and other air-borne particles out of the air. The pattern is varied — coarser on the intake side to reduce surface clogging and provide maximum air flow; diminishing through the filter depth progressively to increase dust-holding capacity.

The "E-Z Kleen" and industrial washable series of air filters are completely framed in metal, while the "Self-Seal" model is frameless. The latter is made

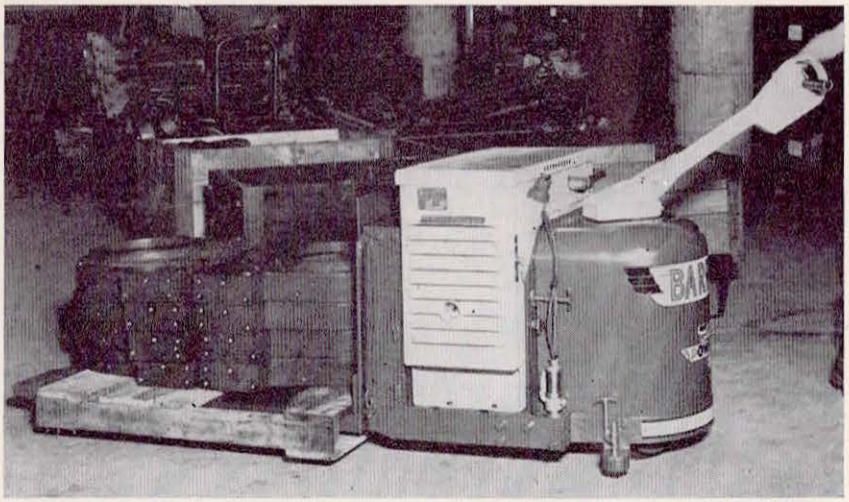


R-P Alumaloy Self-Seal Air Filter with self-sealing edge to prevent by-passing of unfiltered air

slightly oversize to fit tightly against holding frames with a self-sealing edge to prevent by-passing of unfiltered air. It also adds extra filtering surface.

All the R-P Alumaloy air filters are cleaned and recharged with a special R-P filter coat. They are available in 1 in. and 2 in. thicknesses in all standard sizes. Special sizes up to 25 in. by 30 in. can also be obtained.

The Alumaloy air filters have Underwriters' Laboratories Listing of Class I on dry filters and Class II on adhesive treated filters.



The improved "Pallet Ox," manufactured by the Barrett-Cravens Company, 4609 South Western boulevard, Chicago 9, is furnished in capacities of 4,000 and 6,000 lb., and can handle either single or double-face pallets. Fork lengths from 36 to 60 in. are available. Lift of 4 in. is provided

DIESEL FUEL OIL DEHYDRATOR

The Erie Dehydrator is designed both to filter and to remove water from petroleum products. It comprises a horizontal circular tank with the oil inlet at the top of one end and the outlet at the top of the other end. Between is the separating medium bordered on each end by the filter pack retainers, which include 80-mesh screening. Below the outlet end is a sump which collects the water removed from the oil and which has an exterior glass gage to indicate the amount accumulated.

Standard units are designed for 50 lb. per sq. in. working pressure and 75 lb. per sq. in. test, and are available in capacities from 25 to 300 gal. per min., based on gasoline. There will be some variation in capacity dependent on viscosity when used with other fuels.

There are several means available for removing the water which accumulates in the sump, either manually or automatically. There are also two arrangements,

one hydraulic, the other electrically operated, for closing down the system if a greater amount of water should be introduced than can be expelled normally from the sump. Electric blankets may be furnished which will prevent water from freezing in the sump and will insure operation in sub-freezing temperatures.

The dehydrators are available from the Erie Meter Systems, Inc., Erie, Pa., in six capacities. These are 25, 50, 80, 100, 200 and 300 gal. per min., based on gasoline.

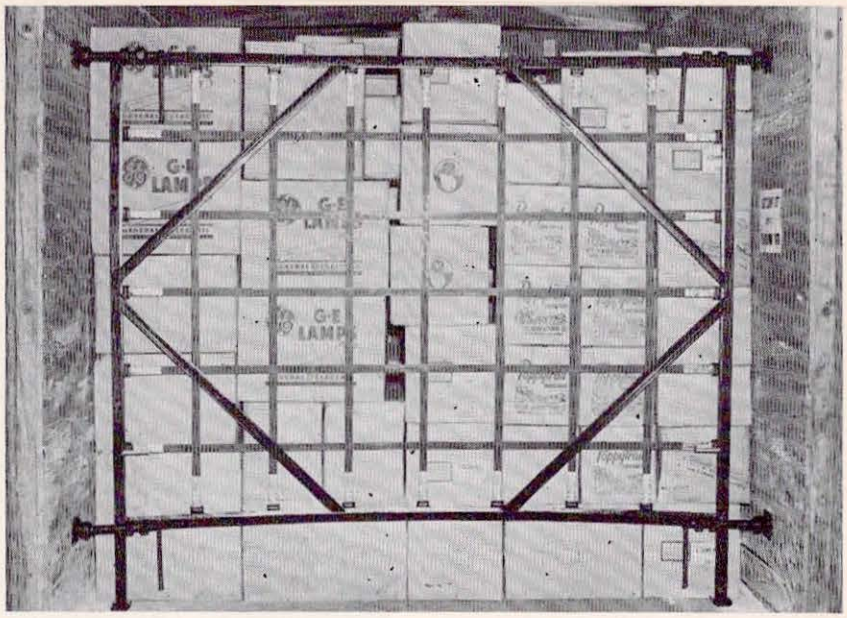
ELECTRIC-STEAM-VAPORIZER

A portable electric-steam-vaporizer that works automatically is offered by the Hydro-Mist Division of Tempo Industries, Inc., Glendale, Cal., as a thorough and inexpensive means of pest control for railroads. Known as Hydro-Mist, the vaporizer holds 44 oz. of insecticide and dispels the solution under heat and pressure. One filling will treat a minimum of 500,000 cubic feet. Hydro-Mist solution, an approved insecticide, is safe for all warm blooded animals, yet it said to be sudden death to flies, moths, gnats, mosquitoes, silverfish, roaches, beetles, bed bugs, ants and other similar insects and pests.

The exterminator weighs a little more than 8 lb. and needs only to be filled, plugged into an ordinary electric socket, and the time clock and thermostat set. The remaining operations are automatic.

STEEL BULKHEAD

A new steel bulkhead, said to be easily and quickly applied, has recently been put on the market by the Pilot Steel Bulkhead Company, 1121 Edmonds ave., Drexel Hill, Pa. Dimensions of this unit are: Height, 7 ft.; frame width, 8 ft.; overall width closed, 8 ft. 4 in.; and overall width open, 9 ft. 2 in. It has a reinforced 3 in. channel steel frame and vertical and horizontal latticework is 1 in. steel strapping.



The bulkhead is held to the car sides, and according to the manufacturer, can be applied at any point in the car by ball-jointed grip plates having eight prongs, which do not penetrate the thickness of the car linings and are said, therefore, to do little damage. Application is said to be a matter of only about three minutes of the time of two men, since the operation consists merely of placing the bulkhead in position against the load and tightening four screw bolts. Carrying handles are attached on the side frames. Skid shoes help in the movement of the unit. The manufacturer estimates that the trip life of this product is twenty times that of a wooden bulkhead, and that trip cost is about one-sixth that of a wooden gate.

AUTOMOTIVE CRANE

Several models of the Coles Crane, an English product, are now available in the United States, through an American organization, Coles Cranes, Inc., 4306 S. Paulina st., Chicago 9. The boom is of the cantilever type mounted on a cen-

trally situated frame, and is said to enable operators to work in very close quarters.

The model illustrated is a 15,000 lb. capacity machine. It is powered by a Ford V-8, 47 h.p. gasoline engine. It has a turning radius of 40 ft. and on level ground will travel 2 m.p.h. loaded and 4 m.p.h. unloaded. The various movements of the crane, such as hoisting and traveling, are operated by separate single motors. All can be operated simultaneously.

A full 360 deg. swing of the superstructure and boom is possible. Boom standard lengths are 12 and 17 ft. Generator rating is a nominal one of 11 k.w. at 1,800 r.p.m. Brakes for hoist, boom hoist and swing are electro-magnetic, while those for traveling are hydraulic on the rear wheels only. All models are equipped with an automatic "safe-load" indicator.

PYROMETER FOR DIESEL EXHAUST

The Illinois Testing Laboratories, Inc., 420 North LaSalle street, Chicago, has announced a continuously operated monitoring instrument for automatically measuring cylinder exhaust temperatures of Diesel engines. Known as the Alnor 1160 pyrometer, it has a large clock-like dial to indicate switch positions which can be read from a distance of 20 ft.

The switch has a motor-driven, rotary-type arm, actuating leaf-type contact assemblies. Overlaps in the rotary switch keep the pointer from returning to zero between positions. Any large deviation from a general average is immediately shown on the pyrometer scale.

A push button on the front panel enables the operator to stop the rotating switch on any selected position for longer readings. Rotational speed is one revolution per minute. The pyrometer can be equipped with an excess-temperature cut-out which activates various alarm systems or engine shutdown controls if any cylinder should reach excessive exhaust temperatures.

Chrome Lock used as a sealer for window sashes and skin laps

IMPREGNATED FELT PROTECTIVE GASKETING

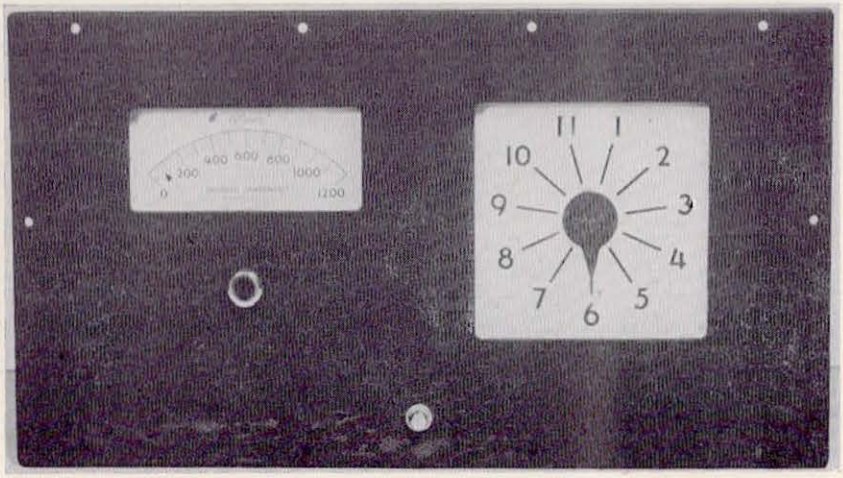
Chrome Lock is a specially compounded and impregnated felt, containing zinc chromate as a corrosion inhibitor. It is used for protective gasketing or sealing between such types of surfaces as flanges and lapped or butted joints. Under bolted, screwed or nailed pressure the resins traverse within the felt and are also extruded onto the faying surfaces in sufficient quantities to form a positive dam. The resultant seal provides both exclusion and retention of air, water, dust and other materials.

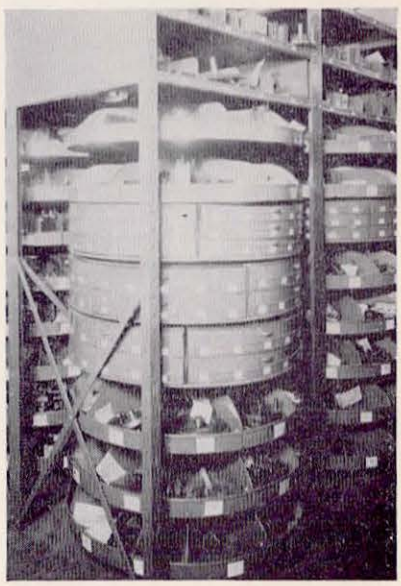
Chrome Lock has a pressure-sensitive adhesive back making it possible for one man to lay it without assistance, even on vertical or inverted installations. It is odorless and non-toxic, and requires no clean-up operation. It is said to remain pliable indefinitely in service and in storage.

Chrome Lock resists permanent distortion; it has 75 per cent to 100 per cent recovery after pressure release, which aids in maintaining a seal for the life of the installation. Under bolted pressure, the gasket fills in face irregularities in the joint, as well as in and around all bolt or rivet holes. It is non-oxidizing, and is said to extrude sufficient resins onto the surface and into all rust pocks in the joint facings to hold the metal in a passive state. It is further claimed to inhibit electrolytic action between dissimilar metals.

Chrome Lock's compressibility and laminating qualities can permit low bolt torque pressures and, in turn, lighter flange materials. On rectangular flanges of 24 gage, .025 metal, stock tapes can be used by lapping at the corners. It is also said to eliminate some machining operations because it permits the use of raw sheet stock in many cases.

Chrome Lock is available from the Products Research Company, 5426 San Fernando road, Glendale, Cal., in four thicknesses, 1/32, 1/16, 1/18, and ¼ in. and in widths from 3/16 to 72 in. Lengths are 100 ft. for 1/32 and 1/16 in. thicknesses; 50 ft. for ⅛ in. thickness and 25 ft. for ¼ in. thickness. Chrome Lock is also available as stamped gasketing to fit individual requirements.

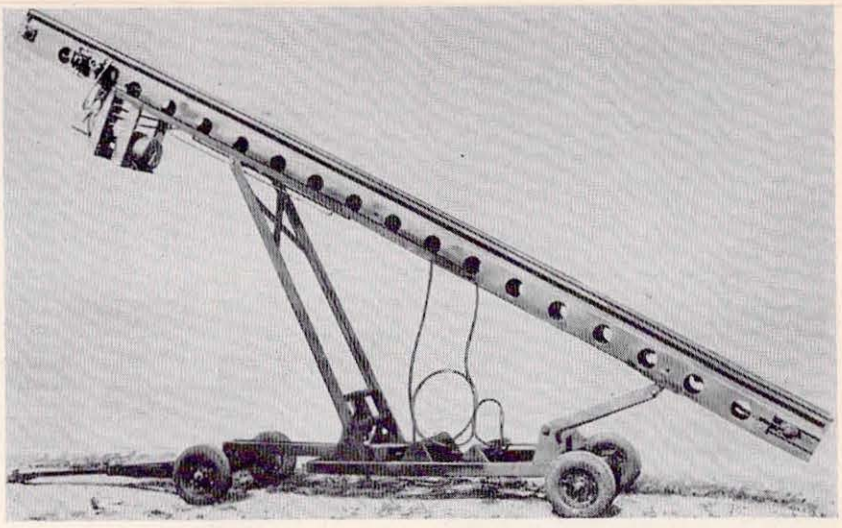




The "Rotabin" is a series of circular, rotating-shelf units designed for holding small parts and tools. Each tray rotates on ball-thrust bearings. This shelving is manufactured by the Frick-Gallagher Manufacturing Company, 400 Shubert Building, Philadelphia 2, Pa.

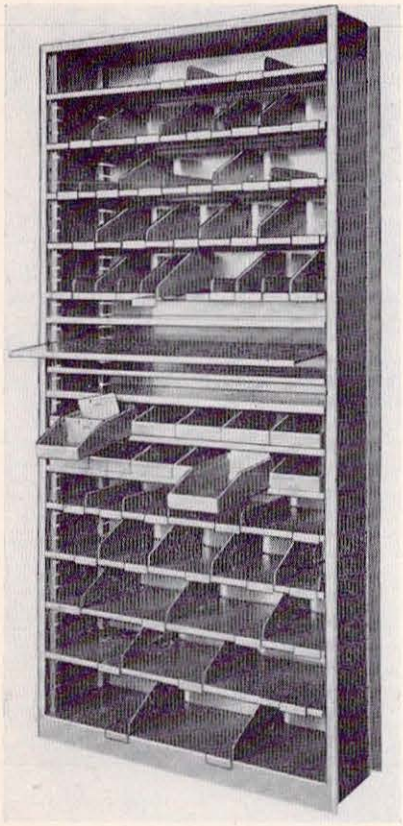
PORTABLE POWER CONVEYOR

A portable belt conveyor, powered either by an electric motor or a gasoline engine, has been put on the market by the Lake Shore Engineering Company, Iron Mountain, Mich. Called the "Tote-All," this conveyor's actions are entirely hydraulically controlled, including reversing the belt and changing belt speeds which range from zero to 400 ft. per min. Standard conveyors are available in lengths from 10 ft. up, in multiples of 2 ft., and belt widths of 8-10-16 in. The height of the low end of the conveyor can be adjusted from 20 in. to 48 in., and of the high end from 48 in. to 15 ft., depending on conveyor length.



METAL STORAGE BINS

Metal storage bins which are assembled without the use of bolts and nuts are a recent announcement of the Boroughs Manufacturing Company, Kalamazoo, Mich. Shelves slide in place on 1½ in. centers. Sloping shelf dividers in four heights between 1⅝ in. and 6⅛ in. snap into place at desired widths. Sloping-front trays are available, 4, 6 or 9 to a shelf. Dividers for trays slide into place on two inch centers. Label holders snap on front of shelves and trays. The all-welded steel "Flexi-Bin" has a baked enamel finish and is available in a choice of five colors.



LOADING RAMP WITH SAFETY LOCK

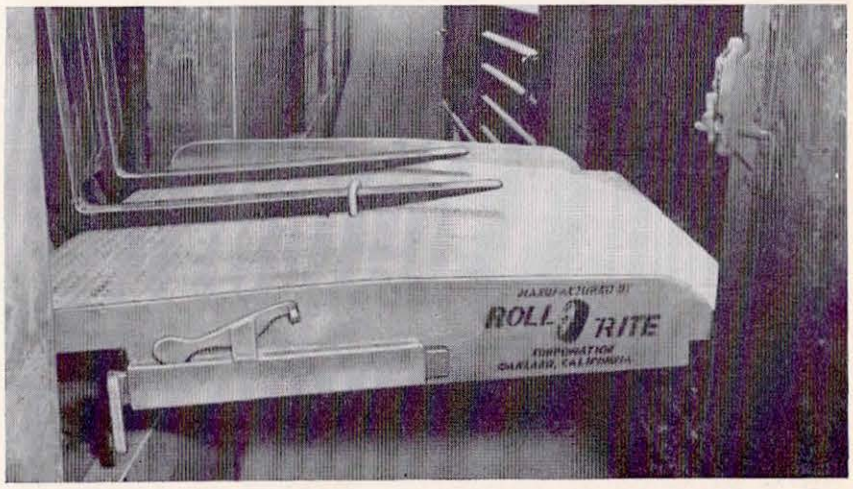
A heavy-duty "safety-type bridge ramp" for use in loading and unloading freight cars by hand or motorized platform trucks has been developed by the Roll-Rite Corporation, Oakland, Cal. The ramp is equipped with a simple mechanical locking device which holds it in a safe position between the loading dock and the car. The sides are beveled for easy entry, and the surface is treated for good traction. Details concerning the safety ramp are contained in Roll-Rite's engineering bulletin No. 501.

SAFETY STEP EDGE

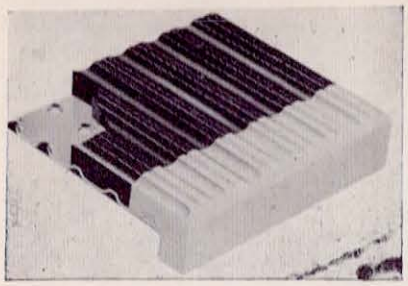
A highly visible white safety-step edge for use on passenger car steps has been announced by Samuel Moore & Co., Mantua, Ohio. Marketed under the registered trade name of Rub-Bub White Safety Step Edge, it is made of a 5/16-in. thickness of white Rub-Bub compound containing a high percentage of live rubber. This is bonded mechanically and chemically to an integral, cupped metal backing.

The design of the surface, trade-named Dri-Foot, has wide grooves for drainage and small squeegee ribs that grip passengers' shoe soles. This surface design, in combination with the toothy texture of Rub-Bub compound, provides a non-skid surface. The high resiliency of the rubber compound is also said to prevent shattered shinbone accidents.

Rub-Bub White Safety Step Edge is cut to required length and fastened in



The Roll-Rite ramp is equipped with a counterbalanced lifting stirrup for easy handling by fork-lift trucks



place with wood or machine screws. It can be mitered to fit curved or irregularly shaped steps.

LIGHTWEIGHT FOLDING CHAIRS

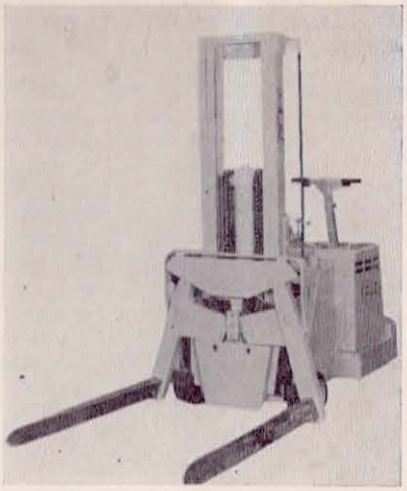
A line of lightweight folding chairs, the "Traveleze" series, is available from the Moynahan Bronze Company, 9087 Alpine st., Detroit 4, Mich., in two styles. Both are cushioned in foam rubber and upholstered to customer specifications.

The Model MF, requiring one action to fold or unfold, is designed for use where space is limited. It occupies an area 20⅞ in. by 27¾ in., and is 12½ in. high when folded. The Model MFR Lounge Chair is for larger rooms; the back is adjustable to three positions or it can be folded to fit under a bed. Folded dimensions of the Model MFR are 30½ in. by 23¼ in. wide by 12¼ in.

THE "BUNNYHUGGER"

The first in a series of special attachment Worksavers has just been announced by the Philadelphia Division of Yale & Towne Manufacturing Co., Philadelphia 15, Pa. This battery-powered hand truck has a capacity of 3,750 lb., travels at 2 m.p.h. under full load, and the mast tilts a full 21 deg. in 10 seconds to center the load. The overall dimensions of the truck not including the forks, are 67¾ in. length by 35 in. width. Mast height is 83 in. and fork elevation is 56½ in. Use of large capacity batteries is possible with this truck, the 23 plate lead-acid type sometimes providing two days of operation without recharging, the manufacturer states.

To pick up loads, the Bunnyhugger is maneuvered so that the load is between the forks. The operator then manipulates a control-lever which causes the forks to grasp the load in a pincer-like movement. The usual procedure is followed for transportation or tiering.



FAIR COMPETITION

It would be a mistake to assume that higher freight and passenger rates are the complete answer to the problems of the railroads. In fact, they can be but a temporary stimulant in keeping the carriers in a reasonably healthy financial condition and, in the long run, they could cause serious harm by driving business to competitors.

What is needed more than anything else if we wish to be completely fair with these carriers and if we wish to keep them out of the hands of the government is to place all transportation on an even competitive basis. That is to say competitors of the railroads should not be subsidized.

Anyone who has ever ridden over a railroad realizes that it costs a great deal of money to keep roadbeds in good condition. He must have seen groups of men constantly at work on that job. These men are paid out of freight and passenger revenues. The railroads themselves must meet these payrolls.

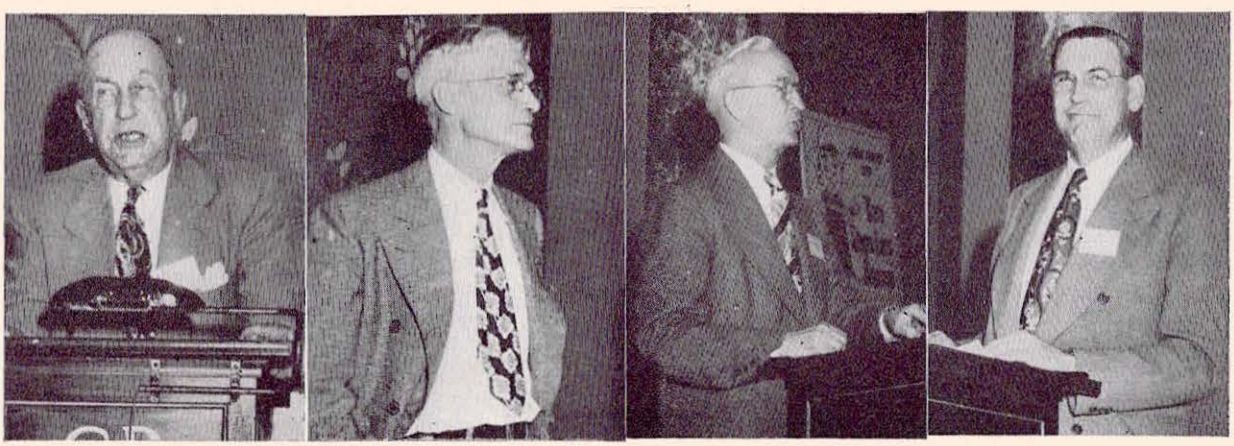
But no one has ever seen the owners of trucks repairing the highways over which they carry freight. And no one has ever seen a bus company crew working along the right-of-way. Being relieved of these expenses, which are defrayed by taxpayers generally — even by the railroads — these transportation people have a definite edge over the people who move passengers and freight by rail.

Moreover, these trucks and buses make it dangerous for taxpayers to ride in automobiles over the roads for which they have paid. They travel along at excessive rates of speed and all too often they hog the highway so that people in smaller vehicles must get out of their way.

Why the railroads have never made a determined fight to even the score with these competitors, we have never been able to understand. Our regulatory authorities have been equally as reticent about giving the railroads a square deal on that score. Can it be that they fear political repercussions or is it a case of taking the easy way out?

It goes without saying that this nation needs an efficient railroad system not only to handle peacetime freight and passenger business but also to move troops and material in the event of war. This cannot be had if the railroads either price themselves out of business or are forced into bankruptcy because of unfair competition.

—Ralph Hendershot, financial editor, New York World-Telegram. Reprinted by permission.



Left to right—J. H. Aydelott, vice-president, A.A.R., addresses the meeting of the Freight Claim Division; Chairman G. W. Loderhose; G. T. Carmichael, vice-president, accounting, New York, New Haven & Hartford, and H. F. Davis

FREIGHT CLAIM SECTION OPTIMISTIC

Aydelott tells group damage bill reduction is vital to railroad solvency — Shepard says too much "prevention" work begins at the top level — Better freight cars asked

Since the number of freight loss and damage claims presented to the railroads in 1948 was 16.7 per cent lower than the 1947 figure, members of the Freight Claim Division of the Association of American Railroads, meeting at Boston, Mass., June 14, 15 and 16, generally expressed a feeling of cautious optimism about the future of the claim situation.

G. W. Loderhose, freight claim agent of the Chicago, Milwaukee, St. Paul & Pacific, and chairman of the division, after citing figures to show that 1948 claim payments were up 10.5 per cent from 1947's $122,215,948 bill, said that "Despite these new highs in claim payments, there are sound reasons for believing that we are over the peak. Encouraging is the fact that . . . 16.7 per cent fewer claims were presented by claimants in 1948. Computing these claims at an estimated average of about $25, that is a saving of about $25 million over what the claim expense would have been had the 1947 rate of claim presentations been maintained. Moreover, the number of unsettled claims carried over to the year 1949 was reduced by 31.3 per cent compared with 1947. A large decrease also reported in over, short and damage reports is further evidence of improvement."

There is much still to be done, Mr. Loderhose said, before anyone can feel complacent. But whatever the accomplishments, "Our sincere thanks and gratitude are extended to the trade groups with which the division's staff have been working toward a better transportation experience, especially the shippers' advisory boards, which with the able assistane of Irving M. Peters, general chairman of the Perfect Shipping Campaign's National Management Committee, have done so much to advance our cause." The National Industrial Traffic League, the Porcelain Enamel Institute, and the furniture manufacturers were other shipper groups coming in for praise for their cooperation with the Freight Claim Division and its activities.

The division and its membership came in for commendation in turn from Warner B. Shepard, president of the National Association of Shippers Advisory Boards, and general traffic manager of the Aluminum Company of America, who said that his talks with shippers indicated that most of them were convinced that the railroads were working hard to prevent loss and damage. Mr. Shepard said, however, that perfect shipping needs a little more "grass roots planning." Too many plans come from the executive offices rather than from the station platforms and factory shipping rooms.

Perhaps never before has so much stress been laid on loss and damage prevention activities, and the possible consequences of failure to succeed. Both Chairman Loderhose and G. T. Carmichael, vice-president, accounting, of the New York, New Haven & Hartford, called attention to the public relations value of loss and damage prevention. Mr. Carmichael further said

that when claim payments of all Class I railroads reached a figure which was about 20 per cent of their net revenue it is obvious how important loss and damage prevention is from the visible financial angle.

J. H. Aydelott, vice-president, Operations and Maintenance Department, A.A.R., further pointed up Mr. Carmichael's theme. After explaining why the railroads found it necessary to ask for rate increases when the general price level and production were declining, Mr. Aydelott said that "increases in the cost of operation and increased taxes require that a still higher level of charges be established if the railroads are to remain solvent. It is these conditions which make it so extremely important that the outlay of money in the settlement of loss and damage claims be reduced to the very minimum, and this can be done if we get at the true causes of loss and damage and remove them. Seldom does an economy drive in the railroad industry promise so much as the effort in which you are engaged. The results, if we are successful, will be just as pleasing to our patrons as to the railroad industry, since both groups will profit immeasurably."

Ever Ride a Freight?

Better than one-third of the time of the 2½-day meeting was devoted to discussions of prevention of loss and damage. In addition to the presentation of the report of the National Freight Loss and Damage Prevention Committee, there was a full program of speakers plus two movies, one of which was the A.A.R. movie on better switching, "Easy Does It," while the other was the Union Pacific's "Who Done It?" which dealt with the proper handling of l.c.l. traffic.

One of the speakers in the prevention sessions was F. W. Rourke, general manager of the Boston & Maine. Mr. Rourke, too, called attention to the magnitude of the freight loss and damage bill, but he went on to say that "Those figures do not represent the whole loss, because when an industry cannot or does not deliver the only commodity it has to sell—in our case transportation of goods in the agreed-upon time, and with delivery intact and in good order—the shipper and consignee are going to some other agency of transportation which can and will produce the goods." Therefore, loss and damage prevention, Mr. Rourke continued, was a job for all departments of all railroads. "Doesn't that thesis," he said, "place the matter squarely in the lap of the A.A.R.—the only medium the railroads have for concerted, unified action or program work?"

Rough handling, Mr. Rourke said, while responsible for a lot of damage, frequently is used as a "catch-all" explanation for damage resulting from various reasons. Faulty equipment, he declared, actually is responsible, in his opinion, for a good part of the loss and damage for which switch and road crews are blamed. Mr. Rourke asked his audience to remember the "dancing and swaying" of freight cars as they went over the road at 45-50 m.p.h. "You couldn't ride one of those cars yourself," he continued. "Can't you imagine what's going on inside that car?"

There are devices on the market which will minimize such action, Mr. Rourke said, and they are being applied generally to newly built cars. They are not being put on cars which are being rebuilt, however—"cars which will be with us for at least another ten years." Such devices as are being applied, are not being installed in the interest of freight-claim prevention, he asserted, "but rather because they have been found to reduce car maintenance expense." Snubbers, he said, will minimize vertical bounce, and can be applied to a car for $40, including purchase price. "Isn't it just as important to set a date beyond which cars not so equipped will not be interchange cars, as it was in the case of brake-shoe spark arresters or bottom-rod supports? . . . Think about it, gentlemen, and go to work to get a little freight claim section influence into the mechanical section."

The operating department, Mr. Rourke said, must know what the freight claim department is running into. (For this reason, he said, all claims for over $500 go across his desk.) From the operating department point of view, he concluded, besides training of employees in better conduct of jobs, control of yard operations is especially important, for "hump yards whose class tracks aren't properly held to the designated grade, or where the retarder operators catch hell every time tracks build high and have to be trimmed, can be worse offenders than flat-switching yards."

Containers Available Again

D. McKeown, assistant mechanical engineer of the Boston & Maine, told of some of the things the Mechanical Division was doing to help loss and damage prevention, such as setting 15,000 ft. lb. as the minimum capacity for draft gears, which resulted in removing 16 different draft gears from the approved list. Like Mr. Rourke, Mr. McKeown believed that there was a need for A.A.R. mandatory rules on equipment improvements. It was his view that a little money spent on freight car improvements would "more than pay dividends" by helping prevent loss and damage.

W. R. White, container engineer of the Union Pacific, speaking during the prevention day activities, assured the convention that competition had returned to the container industry. Shippers have no "alibi" that they cannot get proper containers, he indicated. Mr. White also recommended that more attention be given to coopering. Damage, he said, was generally progressive, and a good coopering job at the first inspection point frequently will stop further damage.

E. J. Dahill, chief engineer, Freight Loading and Container Section, A.A.R., discussed the new and mandatory classification rule on packaging of furniture. This rule, he said, was helping to cut loss and damage. However, he continued, this new packaging was costing the furniture industry an additional $25 million per year, and these shippers believe they have "evidence" that the railroads are not matching their efforts. (On the basis of Mr. Dahill's talk, a resolution was approved, which asked all railroads to reexamine their methods of loading and handling furniture with a view to improving them.)

Reelected to the post of chairman of the division for the next two years was G. W. Loderhose, freight claim agent of the Milwaukee. (Mr. Loderhose for the past few months had been filling out the unexpired term of J. M. Heath, freight claim agent of the Lehigh Valley, who was forced to retire from both his railroad post and the chairmanship of the division be-

cause of ill health.) H. V. Cooper, freight claim agent of the Missouri Pacific, was reelected first vice-chairman, while Heber Smith, freight claim agent of the Southern Pacific, again assumed the duties of second vice-chairman. Attendance at the session was 255.

Following are brief digests of the reports of the Committee on Freight Claim Rules and the National Freight Loss and Damage Prevention Committee.

Loss and Damage Report

The report of the National Freight Loss and Damage Committee (H. F. Davis, supervisor loss and damage prevention, Union Pacfic, chairman) indicated that the matter of loss and damage had received the attention of the board of directors of the A.A.R. As a result, 34 railroads asked that their prevention activities be surveyed by the Freight Claim Division. To date 11 roads have had their surveys completed.

The committee reported many railroads have increased their prevention forces, and it urged that all railroads maintain adequate loss and damage prevention organizations for "Individual carrier prevention activity is the backbone of our prevention program." It also suggested that monthly meetings of field men in the different areas be continued, and that, if possible o.s. & d. clerks be brought into meetings, as their participation should result in better exception reports.

As a result of the committee's efforts, J. H. Aydelott, vice-president, A.A.R., recently wrote all chief operating officers, urging:

1. The establishment of joint inspection service at all common points;
2. Periodical meetings of loss and damage prevention inspectors to exchange experience;
3. Inspection activities to include efforts to discourage the promiscous rejection of freight because damaged;
4. Inspectors to be instructed, and kept informed, of the information needed by freight claim agents in order to determine liability for loss or damage, and the prevention officers to determine steps necessary to stop recurrence;
5. Waiving of inspection to be discouraged;
6. Mechanical division or industrial representatives to be called in when there is concealed loss and damage to carload freight, such as machinery, enameled products, or furniture, in order to determine whether or not the carrier was liable; and
7. Steps be taken by operating officers to improve the recording of loss and damage which is apparent at time of delivery to insure that visible damage is not erroneously stated as "concealed."

Attention was urged to the matter of proper doorway protection. The Superintendents' Association of St. Louis reported that in 1948, 36 per cent of the necessary load adjustment was due to absence, or improper application, of doorway protection.

Enamel Products, Canned Goods, Beef

The committee recommended that staff experts be added to the division's prevention forces, one to specialize on porcelain enamel products and the other on canned goods.

On dressed beef the committee's research indicated that when cars were equipped with efficient snubbers, maintained in good condition, beef did not fall from hooks of refrigerator cars and become damaged. It was reported that weevil infestation of box cars is causing much damage to flour. The best means of getting rid of weevils was found to be blowing out cars under not less than 90 lb. of air pressure. All member roads are asked to blow out cars this summer.

The need for better checking of freight was cited. Bad checking was responsible for many overs and shorts, the committee said, and it recommended a positive loading record such as that in effect on some railroads [Vericheck].

Praise was given the N.I.T. League and the Shippers Advisory Boards for their cooperation in the railroad loss and damage prevention efforts.

Freight Claim Rules

In the report of the Committee on Freight Claim Rules (T. P. Scott, freight claim agent, Erie, chairman) about the only rule proposal which excited much discussion was the amended suggestion of the Pacific Coast Claim Conference that Rule 60-j be changed so that the second paragraph would read:

> For shipment of frozen foods listed below, Rule 64-a shall be considered complied with only if car furnished by carrier, on specific order for loading such foods, is a refrigerator car in good condition, heavily insulated or fan equipped:
> Frozen fruits, vegetables or berries;
> Frozen fruit or vegetables juices;
> Frozen packaged fish, including seafoods;
> Frozen fruit pulp or purees;
> Frozen processed foods;
> Frozen food preparations;
> Frozen sweet cream, fresh or processed.

Rule 64-a provides that, with the conditions indicated above, carrier providing equipment for the movement would be responsible for loss and damage if the specified reefers were not furnished for loading the commodities mentioned in the new Rule 60-j.

A change was made in rule 70, second paragraph, to read as follows:

> Notation of shortage or damage known by delivering carrier to exist, as evidenced by the actual check of carrier's representatives at time of delivery of freight, may be endorsed on the . . . freight bill or other delivery document presented to the consignee.

This change did not go all the way to meet the recommendations of both the N.I.T. League and the Chain Store Traffic League that such endorsement be mandatory.

Not approved was a request from the American Short Line Railroad Association that some means be devised where a short line which was the delivering carrier would not pay the whole expense of inspection and recoopering of perishable freight.

Rule 58, which applies to loss of liquids through leakage, was changed so that it applied specifically to both liquid in bulk and not in bulk. Now, the carrier handling the shipment at time leakage is discovered either must take steps to stop the leakage and to determine the extent of loss or it will be held liable for the loss determined by the next subsequent weight or measurement of bulk shipment or the next inventory of packages showing evidence of leakage in other than bulk shipments. In this change, bulk shipments are defined as "in tank cars, or in barrels, casks, drums or other liquid containers of five gallons capacity or more."

GENERAL NEWS

I. C. C. Opens Hearings On Reparations Cases

Proceedings involve 5 of 17 complaints filed by government

Hearings on five of the so-called government reparations cases got under way in Washington, D. C., on June 21 before the Interstate Commerce Commission's Division 4, consisting of Chairman Mahaffie and Commissioners Miller and Mitchell. The five cases, like 12 other pending proceedings, arose out of complaints whereby the federal government is seeking to recover alleged overcharges which it claims the railroads made on its shipments of various commodities during World War II.

The proceedings involved in the hearings are: No. 29735, wherein the complaint assails charges paid by the government on export freight stopped at storage-in-transit depots; No. 29795, wherein the complaint assails charges paid as a result of the application of railroad "policing" rules to the government shipments moving to Pacific Coast ports for export; and Nos. 29622, 29746 and 29805 which, in turn, assail rates paid by the government on its wartime shipments of soldiers' pack-carrier cases, aluminum airplane landing mats, and steel airplane landing mats. The hearings were originally scheduled for last September, but the commission postponed them at the request of the Department of Justice after the Department of the Army had raised "security" questions with respect to some of the evidence which might have been introduced (see *Railway Age* of September 11, 1948, page 76).

Many Witnesses Appear

The Justice Department, which filed the complaints on behalf of the government, is also handling them in the proceedings before the commission. For this week's sessions the department assembled an imposing array of witnesses. More than 50 appeared to offer brief testimony or introduce exhibits in the storage-in-transit case, the first to be heard, and 27 were scheduled to make like presentations in the second case, that involving the "policing" rules. The presentations were under the direction of Fred G. Binkley, special attorney for the department.

Kenneth F. Burgess of the Chicago firm of Sidley, Austin, Burgess, and Harper, is chief counsel for the railroads. As reported from time to time in *Railway Age*, the railroads have the support of various interveners, including the National Industrial Traffic League, all of the so-called standard railroad labor organizations, the Railroad Security Owners' Association, the Transportation Association of America and several chambers of commerce and other business organizations.

Before the Justice Department's presentation got under way, Mr. Burgess made a statement on behalf of the defendant roads. Calling his remarks a "few statements of position in lieu of motions and objections," Mr. Burgess noted first that the material submitted by the Justice Department was "voluminous"; and he went on to assert that "some of it under ordinary rules of evidence is open to objection as to competency and much as to relevancy." However, it will not be the railroads' purpose "to object to its introduction or to move to strike it," Mr. Burgess added.

Claims "Wholly Unjustifiable"

"So much publicity," he continued, "has attended the filing and prosecution of these cases that we prefer to let those who make these claims have wide latitude in their efforts to substantiate what we believe to be wholly unjustifiable and inequitable claims. In doing so, we ask only that the commission and its examiners do not take this attitude on our part as acquiescence in the allegations nor approval of the manner of proof. In our turn we shall show the infirmities of this evidence by affirmative evidence of our own."

The railroads do not contemplate the filing of any "general answer or motion presenting particular defenses upon which we shall rely," Mr. Burgess also advised the commission. Meanwhile, he recalled that answers "in the nature of general denials" had already been filed by individual defendants; and he promised to "point out in due course" that "a large bulk of the claims are barred under section 16, paragraph 3, of the Interstate Commerce Act." That is the paragraph which fixes time limits for the filing of claims for damages against carriers. "Other defenses that are in part legal and in part factual" were also mentioned by Mr. Burgess in his general outline of the railroads' plans.

"We shall show," he added, "the effect of income and excess profits taxes upon the carriers, amounting in many instances to as much as 85½ per cent of the net revenue, and we shall show that the complaints seek a double recovery to the extent of those taxes. We will also show that the great part of the government freight was transported by the carriers on reduced rate agreements under section 22 of the Interstate Commerce Act which provided lower charges than the rates applicable to commercial shipments, and in respect to which land grant deductions were not applicable. We will rely on the fact that the issues involved in the Export Rules Case, Docket No. 29795, were settled by compromise agreement between the government and the railroads . . . we will also direct attention to the fact that in both the Export Rules Case and the Transit Case, Docket No. 29735, the plaintiff has wholly failed to present any evidence that the freight charges paid were unreasonable."

Mr. Burgess explained that he was mentioning these matters "so that there may be no misunderstanding or claim later that we have waived any defenses which are available to us." The government's "retroactive attacks on the railroads' wartime revenue are of such magnitude as to threaten the solvency of carriers generally," he said, adding that the claims involved in all the cases "aggregate at least two billion dollars and have been estimated to go as high as three billion." Such an attack has "naturally," as Mr. Burgess put it, "provoked profound interest on the part of the entire railroad industry—management, employees, security owners and shippers." With further reference to the evidence which the railroads will produce, Mr. Burgess said it will include a showing as to "the exceptional nature of the service which was rendered by the railroads to the government," and "substantial" and "conclusive" evidence "to show that the charges which were paid were not unreasonable."

Mainly Involve Reparations

"We shall show," he continued, "that during the years for which reparation is sought, the railroads earned a return of only 4.6 per cent on their net investment. The very magnitude of these reparation cases has made them in essence great revenue cases, and we will deal with them on that level as well as to justify the charges by other customary standards of reasonableness. With trifling exceptions they involve reparation only, and at this late date seek to take away from the railroads substantially all their net income for their wartime operations."

In closing, Mr. Burgess complained that the railroads' task of preparing their defense had been made "much more burdensome" than it otherwise would be by the "refusal" of the Justice Department "to comply with our requests for information in the hands of government departments, which has compelled us,

wherever we could, to secure such necessary evidence in other ways." He also emphasized again that the carriers plan to make a "complete and comprehensive" defense, and thus "are not waiving any defenses in law or in fact by omitting technical motions and objections to evidence at this time."

The witnesses called by the Justice Department were Army and Navy officers and civilian employees of the armed forces who had been concerned with the planning and operations of the storage depots or with the handling of shipments which went through such facilities or other traffic involved in the complaints being heard. Most of these witnesses appeared only briefly to introduce exhibits, and the cross-examinations to which some of them were subjected were also brief, being designed mainly to test the witnesses' familiarity with the material included in the exhibits. Some of this cross-examination was conducted by John S. Burchmore, counsel for the N.I.T. League.

The exhibits covered such matters as descriptions of the storage depots and their operations, and information as to how various government shipments moved and the rates charged. Stacked up, the exhibits were an impressive pile of paper. When one witness remarked that "millions" of shipments were involved, Commissioner Mitchell observed that "we must have a million here."

Col. Lasher a Witness

Among the witnesses was Colonel E. C. R. Lasher who served during the war period as deputy chief of Traffic Control Division in the office of the Army's chief of transportation. Over Mr. Binkley's objections, which were overruled by Chairman Mahaffie, Mr. Burgess drew from Colonel Lasher an expression of the colonel's "opinion" that railroad rates on the army's shipments for export would have been "non-compensatory" if such rates were on the level of published export rates, less land-grant deductions.

Colonel Lasher had previously explained that army export traffic stopped off at storage depots moved under section 22 quotations which provided that land-grant deductions would not also apply. And Mr. Burgess brought out the fact that the Army usually had the alternative of paying the carriers' published rates and taking the land-grant discount if that would result in lower charges than the section 22 quotations. In response to other questions, Colonel Lasher told Mr. Burgess that he had always found railroad men cooperative in negotiations about rates; that Army officers drawn from railroad service were competent men; and that there was "no question" of the "loyalty" to the Army of those former railroaders.

In his direct testimony, Colonel Lasher had told how the Army's planning for the domestic transportation services it would require had been directed toward avoiding the congestion which characterized the ports during World War I. Out of such planning came the storage-depot set-up, and the Army in June, 1941, asked the railroads for arrangements whereby any carload export shipment moving on a government bill of lading could be stopped and stored en route, and later reshipped to a port for export at the export rate plus a reasonable charge for the stopping in transit.

The railroads, the colonel said, were unwilling to publish tariffs on that basis; but they did agree to make such arrangements available in section 22 quotations—subject to the provision that land-grant deductions would not also apply. The Army's quartermaster general objected to that provision, but the need for the storage-depot set-up was such that the War Department decided to accept the railroad offer as made. Similar testimony on the Navy's inland-supply-depot plan was given by Rear Admiral Carl A. Trexel.

I. C. C. Hears Argument On Western Rate Pact

No rate-conference agreement needed, Justice Department says

Oral argument was heard June 20 at Washington, D. C., by the Interstate Commerce Commission in connection with its consideration of the rate procedures agreement proposed by carrier members of the Western Traffic Association. The agreement, and the accompanying application for its approval, were filed under section 5a of the Interstate Commerce Act, which was added last year by the Bulwinkle-Reed Act, and the proceeding is docketed as Section 5a Application No. 2.

Arguments in support of the application were made by Douglas F. Smith of Chicago, chief counsel for the applicants; Joseph H. Hays, counsel for the Association of Western Railways; C. A. Miller, vice-president and general counsel of the American Short Line Railroad Association; and John S. Burchmore, counsel for the National Industrial Traffic League. The only opposition arguments were made by Department of Justice attorneys—James E. Kilday and Edward Dumbauld.

Generally, the position of the department seemed to be based on a contention that no agreement was necessary because all proper benefits of the conference method of rate-making could be realized without immunity from the anti-trust laws. "We are not opposed to conferences as such—we are opposed to con ferences as is," was the way Mr. Kilday put it. And Mr. Dumbauld argued that the issue before the commission was not whether the proposed agreement promoted the national transportation policy, but whether relief from the anti-trust laws should be granted.

Meanwhile, Mr. Smith had argued that the commission was confronted with two "primary" questions, i.e., whether the agreement should be approved, and whether it accords individual western railroads the free and unrestrained right to take independent action. Mr. Smith pointed out that the general plan of the agreement is to continue the western procedures of the past, which have become recognized as a "venerable institution" that "serves the public well." He suggested further that the procedures might well be described as the carriers' "rate-reducing machinery," because the evidence of record indicates that some 97 per cent of the rate changes made in a recent period involved cuts.

Unquestioned for Half-Century

Mr. Smith recalled that the western set-up, as revised in the light of the Supreme Court's 1897 decision in the Trans-Missouri Freight Bureau case, won the approval of the attorney general in 1898; and it remained unquestioned for "almost half a century" thereafter. It was not until 1942, during the period of the war, as Mr. Smith put it, that "consistency and reason expired" in the Department of Justice. He noted how the Office of Defense Transportation and other war agencies, including the armed services, asserted a need for the continuance of the assailed procedures; and how these presentati s resulted in issuance of the certificate of war necessity which granted immunity for the duration of the war. In passing the Bulwinkle-Reed Act, Congress indicated its de-

Railroad Fair Re-Opened June 25

The 1949 edition of the Railroad Fair, incorporating many new entertainment features and offering enlarged and improved facilities for handling its visitors, opened for a 100-day run at Chicago on June 25. The re-opening of the spectacle which last year attracted in excess of 2,500,000 customers was heralded on June 24 by a parade, through Chicago's "Loop," of Fair entertainers, replicas of famous historic locomotives, oldtime vehicular equipment and military units.

This year's Fair visitor will enjoy many new exhibits, details of which will be given in illustrated articles in the *Railway Age* of July 2. Among the new attractions are a free ice show, replica of a "gold rush" city, an operating cable car such as is used in San Francisco, Cal., replica of the Moffat Tunnel, a children's theater, a miniature steam train, an additional train on the narrow-gage line which traverses the grounds, and a water "thrill show"' on the lake front. Two new scenes have been added to the "Wheels-A-Rolling" pageant, and the grandstand capacity for this feature has been enlarged by 1,000 seats. Rest room facilities on the grounds have also been expanded.

sire to afford permanent relief, Mr. Smith said.

He went on to assert that the record in the present case proved that the proposed agreement would promote the national transportation policy. Indeed, he called that a "gross understatement," because the record, as he read it, showed that no objective of the national policy could be attained if the conference method ceased to operate. Recalling that the Department of Justice neither cross-examined the railroad witnesses nor offered any presentation of its own at the hearings, Mr. Smith found the department standing "completely in default of any showing in support of their opposition."

As to the right of individual roads to take independent action, Mr. Smith referred to evidence of record which, he said, proved that his right had been recognized in the west for 50 years, and that it has been exercised "thousands of times." He read to the commission the agreement's overriding provision, which stipulates that any provision seeming to restrict the right of independent action is merely "advisory." And he said that the applicants "accept in advance" and ask the commission to impose as a condition to approval of the agreement "any language" which will fortify the independent-action provisions.

Has No "Affirmative Suggestion"

Mr. Hays, in his brief presentation, addressed himself to four points. He noted, first, that the Department of Justice had made no "affirmative suggestion" as to how railroad rate-making activities could be carried on if the agreement were disapproved. He then reminded the commission again that the department had waived cross-examination of railroad witnesses and offered no witness of its own; and that no shipper had appeared in opposition to the proposed agreement. Finally, Mr. Hays suggested that commission approval of the proposed agreement would not be irrevocable, because paragraph 7 of section 5a clothes the commission with "continuing power of supervision" over approved agreements.

Vice-President Miller of the Short Line Association said that 125 members of that organization operated in the territory covered by the agreement. They approve the agreement and think the evidence has shown "conclusively" that the conference method is necessary, Mr. Miller added. Under the agreement, he explained, the short lines have the right to attend committee meetings, to "know what's going on," and to present their proposals. And he did not think they needed to worry about their right of independent action, because that would not depend upon the provisions of the agreement—it was guaranteed by the Interstate Commerce Act.

Opposition arguments of the Department of Justice, Mr. Miller said, should be considered an attack on the law rather than on the agreement. He recalled that the department submitted the same arguments to Congress, only to have them rejected, when bills out of which section 5a evolved were under consideration on Capitol Hill. Thus, the matter to which the department was addressing itself was outside the jurisdiction of the commission, the Short Line Association vice-president concluded.

N.I.T. League Supports Agreement

Presenting his supporting argument on behalf of the N.I.T. League, Mr. Burchmore noted that the league had suggested some modifications of the agreement at the hearings. He added, however, that those proposals were "minor" in the sense that the league wanted the agreement approved even though the commission should reject its suggestions. As to the right of independent action, Mr. Burchmore approved of the agreement's plan which contemplates (but does not require) that independent action be delayed until the conference procedures have run their course. He emphasized that shippers are often as interested in rate reductions which may be accorded their competitors as they are in rate increases; and thus, he said, the shippers want no plan which encourages rate cutting.

Mr. Burchmore also urged the commission not to make its approval order "rigid and legalistic," lest there be a loss of desirable flexibility in operations under the agreement. In closing, the N.I.T League counsel asked, if the proposed agreement is "bad," what plan the Department of Justice would suggest for "carrying out the Congressional intent."

The department's opposition argument was opened by Mr. Dumbauld, who commenced with an identification of Mr. Smith as counsel for the railroads in the so-called Lincoln case, i.e., the department's anti-trust complaint against western railroads and the Association of American Railroads which is pending in the federal court at Lincoln, Neb. Mr. Dumbauld, as he put it, could not escape the thought that the applicants may expect some "beneficial result" of the present proceeding in the Lincoln case. He went on to ask the commission, if it approves the application, to stipulate that such approval was not to be construed as having any bearing on the Lincoln case.

Commissioners Not "All Deaf"

Commissioner Mitchell suggested that the commission did not have to instruct the judge who is trying the Lincoln case; and Commissioner Johnson asked how anything the commission said could have any effect on the Lincoln case. Mr. Dumbauld persisted, and his repeated calls for the stipulation became so loud that Commissioner Aitchison broke in to advise him that the commissioners were not "all deaf."

Coming to his attack on the agreement's provisions relating to the right of independent action, Mr. Dumbauld called them "just paper generalities." If the agreement "means anything," he said, the top "executive committee" does have the final say. The "joint consideration" of rate matters contemplated by section 5a, as the department reads it, means "joint consideration by all" interested roads. Mr. Dumbauld argued that the agreement does not follow through on that idea, because it involves "progressive disenfranchisement" of member roads. As the Justice Department attorney further explained

(Continued on page 122)

Finds Freight Rates Never Retarded South

Report to President's economic advisers refutes old charge

Railroad freight rates "are not now, and never were, a major barrier to the economic development of the South," according to a report on "The Impact of Federal Policies on the Economy of the South" which has been submitted by the National Planning Association to President Truman's Council of Economic Advisers. Noting that "few, if any," of the complaints about freight rates have come from "leaders of southern industry," the report said that the fight against the rate structure "has been waged mostly by political leaders, newspaper editors, and individuals with the crusading instinct."

The National Planning Association is a non-government agency with headquarters at Washington, D. C. It describes itself as "a non-profit, non-political organization, established in 1934, devoted to planning by Americans in agriculture, business, labor, and the professions." The present report, the first N.P.A. study of its kind, was prepared by Dr. Calvin B. Hoover, director of research for the association's Committee of the South, and Dr. B. U. Ratchford, both of whom are on the staff of Duke University's Department of Economics.

Their summary finding was that the South's basic economic problem is that of raising its per capita wealth and income. For the solution of that problem they made various recommendations, designed generally to promote development in the South of more industry and the "kind of industry in which the value of output per worker is high," and of an agricultural set-up with fewer "uneconomically small farms" and more "medium-sized farms employing fewer people with larger output per capita and with greater diversification of crops."

Just "A Political Issue"

The section on freight rates noted at the outset that the rate structure is the alleged barrier to southern progress which has "perhaps" received "the greatest amount of popular attention." This was true, according to the report, because the allegation seemed "most logical," and because "it absolved the

region itself from all responsibility for the economic lag and placed the blame on the railroads and financial interests which control them—always favorite whipping boys." Other reasons assigned for the popularity of the issue included the fact that "it offered a quick and easy panacea if the right law were passed or the correct court decision gained"; and the fact that the matter "easily and quickly became a political issue," after which time "the public heard much argument but little factual analysis."

It was conceded that there have been cases in which southern producers have been "hurt by high interregional freight rates," such situations being "inevitable when thousands of rates are involved." But, Drs. Hoover and Ratchford continued, "it is our opinion that this factor has been greatly over-emphasized. . . ." Two reasons for this opinion were the authors' findings that the difference in rates "has not been as great as was popularly claimed"; and that "even when the southern rates were higher, they have not been the major obstacle many have imagined—in some cases they actually have been advantageous to southern producers."

Elaborating on each of these findings, the report first discussed the "elementary misconception" in arguments which have implied that it was "generally cheaper to ship a carload of freight from, say, New York to Atlanta, Ga., than to ship the same carload from Atlanta, Ga., to New York, and that this difference existed because of the caprice or evil design of the railroads."

"In general this is simply not true," the report continued. "As a general principle freight rates to and from points in the South and elsewhere will be the same. The Interstate Commerce Commission requires that when differences do exist in the rates for movements in different directions these differences must be justified by differences in costs. The difference in rates has not been presented in its true perspective and its importance has been greatly exaggerated. Most attention has been concentrated on *class* rates, which have ranged some 28 to 30 per cent higher in the South than in the Northeast. But very little traffic, comparatively, moves on class rates. . . .

Low Commodity Rates Available

"In most cases, as soon as there is any considerable amount of any commodity to be moved in any region, shippers can obtain from the railroads an exception or, most likely, a commodity rate, which is lower than the class rate it would otherwise take. Commodity rates have been obtained for most southern commodities (by volumes moving) and in many cases those rates have been so constructed as to reduce or eliminate the territorial differential. In fact, on several important southern commodities . . . the southern rates are substantially lower. That shippers have been able to get satisfactory commodity rates on most of the major southern commodities is indicated by the fact that there have been very few, if any, complaints about high freight rates on such things as textiles, manufactured tobacco, petroleum products, chemicals, lumber, or furniture."

The report went on to refer to the interterritorial rate proceedings before the I.C.C. in recent years, and to the adjustment ordered by the commission in its decision in the No. 28300 investigation of the class-rate structure. "Unless this policy is reversed it should finally and for all time remove this factor from the area of discussion," Drs. Hoover and Ratchford said.

They proceeded then to a discussion of their finding that the importance of differences in freight rates "has been greatly exaggerated." Most of the "horrible examples," they said, have cited rates on commodities of "minor importance." Such rates "may be obsolete and of no appreciable importance to anybody," they explained, adding that, if there were "any considerable amount" of traffic to move on such rates, the railroads "might well revise them or make new ones"—because the railroads "are interested in developing business along their lines" and are "willing to consider new rates when it appears profitable to do so."

In this connection, the report also pointed out that many parts of the South are served by water transportation, while the motor truck, in recent years, has also given the southern producer a "bargaining weapon in dealing with the railroads." Moreover, the report said further that "with some items, air transportation is also becoming a significant form of competition."

The Example of Virginia

The failure of Virginia to become the "leading industrial state of the South" was mentioned by the authors as another reason for their conclusion that freight rates "have not had the importance many attached to them." They said: "Virginia is almost wholly within Official or Eastern freight territory and thus enjoys the lower class rates of that territory. It has most of the characteristics shared by the other southern states and in addition is much closer to the great eastern markets. If freight rates were as important as many claimed, Virginia should be the leading industrial state of the South. While the state has made considerable industrial progress, there is nothing in its record to indicate that it has enjoyed any special advantage over the other southern states."

The freight-rate section of the report closed with the reference to the fact that the complaints have not come from "leaders of southern industry." There the report also said: "In fact, at times it has been difficult to find substantial businessmen who had grievances and who would appear as witnesses. Considered as a group there does not seem to be much active dissatisfaction with the comparative freight rates which they now have."

Truck Traffic Shows Signs of Levelling Off

Common carrier loadings reverse three-year upswing

A leveling off in the volume of freight handled by Class I intercity truck lines, and a possibility they may be entering a period of decline, has been reported by the American Trucking Associations.

The A.T.A. based its opinion on the trend of truckloadings since the end of the war in August, 1945. It compiled reports of 1,383 Class I intercity motor carriers (those with annual gross revenues of $100,000 or more) and found their tonnage for the first quarter of 1949 showed an increase of 4.1 per cent over the same period of 1948—setting an all-time first-quarter record.

But figures for the first four months indicated a definite leveling off and pointed to a probable decline. When American industry stopped war production and began converting to peace-time production after V-J day, truck tonnage declined in each of the first seven months that followed—September, 1945, through March, 1946—while the conversion process was underway. The downward trend stopped in April, 1946, and motor carriers hauled more freight in each month thereafter until the end of 1948 than they had in the same month of the preceding year. The total increase in tonnage during this period was substantial.

This year's figures indicate, however, that the upsurge has stopped, at least temporarily. Although there was an increase of 2.9 per cent in January over January, 1948, there was a decrease of 0.5 per cent in February below the same month in 1948—the first decline in 34 months. March showed a slight increase of 0.9 per cent over March, 1948, but in April there was a decrease of 3 per cent under April, 1948.

Next Few Months Will Tell

W. A. Bresnahan, A.T.A.'s director of research, commented that it would be premature now to attempt to appraise the full significance of the figures for the first four months of 1949. Results in the next few months, he added, should provide a basis for determining whether truck tonnage simply is leveling off or is going down grade, or perhaps is experiencing a lull period preliminary to further expansion.

A.T.A.'s index of truckloadings for the first quarter of 1949 edged up to 184, the highest first quarter figure of record. In computing the index, the volume hauled by Class I carriers in the first quarter of 1941 is used as 100. The 1947 first-quarter index of 152 was 31 points above the same period of 1946, while the 1948 first-quarter index climbed another 25 points to 177. By comparison, the seven points gained in the first quarter of 1949 is small.

The compilation showed the 1,383 car-

"THE PARADOXICAL POSITION"

". . . railroads . . . are in the paradoxical position of enjoying a good volume of traffic and at the same time experiencing a real threat of insolvency because of restrictions, regulations and unfair, subsidized competition. This situation has developed not because of lack of good management, but because of an apathy on the part of the public—a misconception of the true facts and problems which confront the railroad industry.

"The railroads today are treated by the government, by labor and by the public generally, as though they are a monopoly. They are hamstrung in their efforts to meet a vigorous and progressive competition because of elaborate regulations laid down at a time when the rail industry did enjoy a virtual monopoly in transportation, and the result today is that rail managements are prevented from making changes in their practices to meet rapidly changing economic and competitive conditions. These restrictions are in effect today when the railroads are faced with enterprising, and almost non-regulated, competitive agencies of transportation.

". . . the railroads are not asking for sympathy, nor does railroad management expect the public to force other modes of transportation out of business. We do want you to realize, however, that there are ills in the railroad industry that must be cured—that the railroads must be given a fairer break, and placed on a more equal footing with their competitors.

". . . the railroads must be deregulated, and put back into the free enterprise system. . . . No industry kept in such an elaborate and constantly growing regulatory strait-jacket as the railroads can possibly be as responsive to the widely varying demands of its customers as it should, and that is why we say that the answer is largely in the hands of the public and our law-making bodies.

"In other words, it is going to require the active interest and support of the public generally . . . to create an awakened public opinion that will demand a square deal for the railroads. The railroads provide the basic transportation arteries of our nation, and it is to the interest of everyone that the industry be kept in a healthy and progressive position. The most capable railroad management cannot do that without your help and support."

—From an address by R. J. Morfa, chairman of the board, Missouri-Kansas-Texas, to the chamber of commerce, Denton, Tex., June 17.

riers transported a total of 29,821,685 tons, in the first quarter of 1949, compared with 28,652,450 tons in the same period of 1948. The only regional decline was in New England, where 136 carriers hauled 4.7 per cent less than in the same period a year ago. Their tonnage amounted to 7.07 per cent of the total tonnage for all regions.

The Middle Atlantic region's 339 carriers handled 23.23 per cent of the total and recorded an increase of 0.4 per cent; 336 carriers in the Central region handled 32.91 per cent of the total tonnage and showed an increase of 6.9 per cent; 152 carriers in the Southern region handled 9.02 per cent of the total and showed an increase of 12.3 per cent; 61 carriers in the Northwestern region handled 4.41 per cent of the total and recorded an insignificant increase, remaining virtually on the same level as in 1948; 90 carriers in the Middle Western region accounted for 5.54 per cent of the national total and recorded an increase of 2.5 per cent; 92 carriers in the Southwestern region carried 5.57 per cent of the total and showed an increase of 5.7 per cent; 39 carriers in the Rocky Mountain region handled 2.27 per cent of the total and showed an increase of 14.2 per cent; and 138 carriers in the Pacific region handled 9.98 per cent of the total and recorded a 3.7 per cent increase.

About 57 per cent of the total tonnage was hauled by 842 carriers classified as general freight haulers. They recorded a 3.7 per cent increase over the first quarter of 1948. The 44 household goods carriers included in the compilation accounted for less than one per cent of the total tonnage and recorded a decrease of 4.9 per cent. The 29 heavy machinery haulers handled less than one per cent of the total and reported a decrease of 0.1 per cent while 81 carriers of liquid petroleum products handled 17 per cent of the total and reported a decline of 3.9 per cent.

Twelve carriers of refrigerated liquid products, handling less than one per cent of the total, reported a sharp drop of 15.7 per cent, but 18 carriers of refrigerated solid products reported an increase of 26.5 per cent, although their tonnage also amounted to less than one per cent of the total. Fifty-one carriers of motor vehicles, which handled almost four per cent of the total tonnage, reported a substantial 18.3 per cent increase, and 15 carriers of building materials, handling almost two per cent of the total, reported an increase of 22.3 per cent. Five carriers of film and associated products, handling less than one per cent of the total, reported an increase of 8.5 per cent.

The remaining 260 carriers, placed in a single miscellaneous group, handled 18 per cent of the total tonnage and recorded an increase of 10.9 per cent over the first quarter of 1948.

"Merchants Limited" Will Carry Coaches

The New York, New Haven & Hartford's extra-fare New York-Boston, Mass., "Merchants Limited" will include coaches in its regular consist beginning June 26. Coach passengers, who will pay an extra fare of $1.21, including tax, will have a lounge-observation car with beverage service. A new grill car also will be provided for coach passengers, on which prices for meals will be the same as in the grill cars on other Shore Line trains. A new dining car will be provided for the Pullman section of the train.

On the same date the running time of the Boston-New York "Yankee Clipper" will be cut by 15 min., thus bringing it to the 3 hr. 55 min. schedule of the "Merchants Limited." Further speed-ups of the New Haven's New York-Springfield, Mass., service also will be effective on June 26.

Says New York State May Have to Run Long Island

The creation of a New York State Authority to take over and operate the Long Island may be necessary to insure continued service, according to a report of the 7-man Nassau County Transit Commission filed this week with J. Russel Sprague, Nassau County Executive.

Before such a step is taken, the commission's report recommended there be undertaken a comprehensive engineer-survey, which would cost an estimated $100,000, of the bankrupt railroad's capital needs and earning capacity, as well as a court-supervised accounting of past intercorporate transactions between the Long Island and the Pennsylvania. The accounting would show, the report said, that substantial revenues which should have been credited to the Long Island went to the Pennsylvania. A proper division would perhaps entirely eliminate claims of $52,940,197 that the Pennsylvania has asserted against the Long Island in the pending bankruptcy proceedings.

It was estimated by the commission that the Long Island needs capital improvements of $40,000,000, including new cars, a new terminal in Long Island City to connect with the New York City-owned transit system there and the substitution of Diesel-electric motive power for coal-burning locomotives.

Pan American Rail Group Holds First Meeting

The United States Commission in the Pan American Railway Congress Association held its first meeting at the Department of State in Washington, D. C., on June 21. As noted in the *Railway Age* of June 18, page 84, the eight members of the commission, which is headed by William T. Faricy, president of the Association of American Railroads, were appointed recently by President Truman.

The commission's June 21 meeting was preceded by ceremonies at which the members took their oaths of office and received Presidential commissions. At the meeting they discussed a program of work which includes establishment of close relationship with the headquar-

ters of the association in Buenos Aires, Argentina, and preparations for its seventh congress to be held in Mexico City from October 10 through 20, 1950.

Decision was made to assist the association in studying improved methods of accounting for all Latin American railroads, in which the practices developed by United States railroads and the requirements of the Interstate Commerce Commission are expected to constitute important precedents. Interest of the U. S. Commission in the government's technical assistance program was also evidenced.

The commission members reviewed the current work of the association, and appointed two officers who are at present government officials and who will serve without additional salary. They are Walter S. Abernathy, special assistant in the Transportation and Communications Branch, Office of International Trade, Department of Commerce, as executive secretary; and Kenneth N. Hynes, attache in the United States Embassy at Buenos Aires, as resident member of the association's permanent commission.

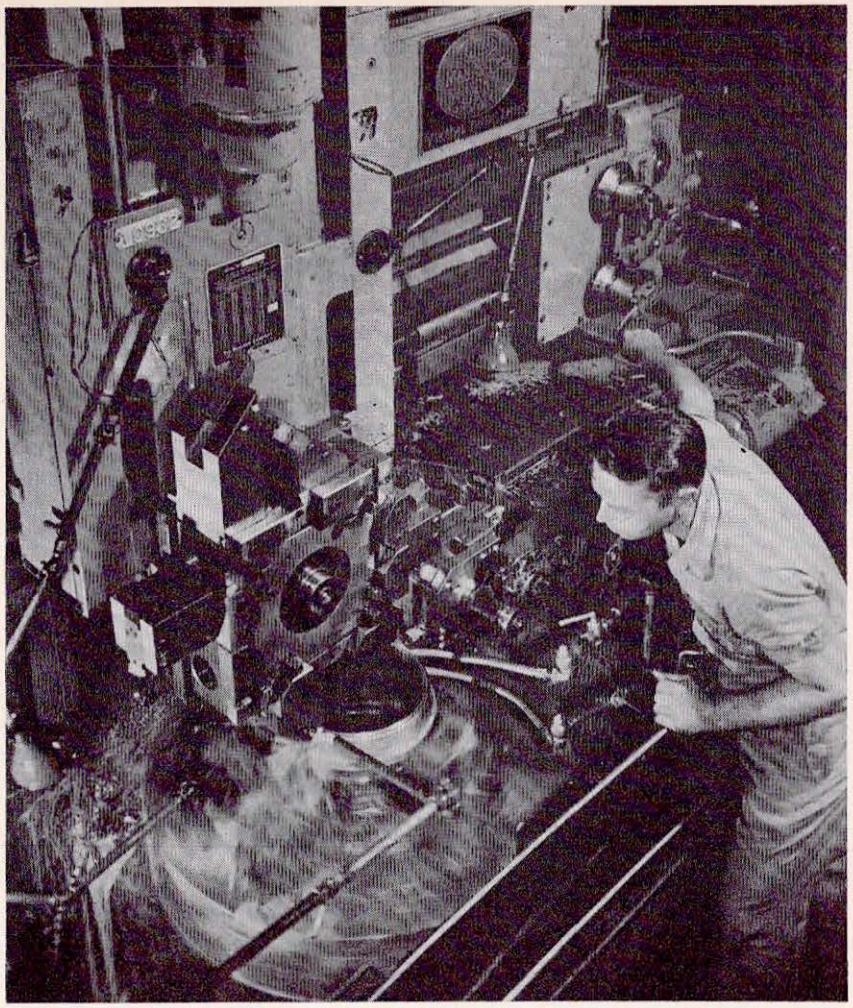
P. R. R. Cuts Schedules Of Three Through Trains

The Pennsylvania has announced that the running times of three trains—the "Manhattan Limited" and the "General," New York-Pittsburgh, Pa.-Chicago, and the "Senator," Boston, Mass.-Washington, D. C. (operated jointly with the New York, New Haven & Hartford)—will be reduced beginning June 26. The "General," which will be re-equipped with new all-room sleeping cars, lounge and master twin-unit dining cars, will operate on a 16-hr. schedule. It will leave New York at 5 p.m., Eastern Daylight Time, and arrive in Chicago at 8 a.m., Central Standard Time. Eastbound departure from Chicago will be at 3:30 p.m., with arrival in New York at 8:30 a.m. The "Manhattan Limited" will be quickened by 50 min., leaving Chicago at 1:30 p.m., one hour later than at present, and arriving in Pittsburgh at 10:55 p.m. and in New York at 7:35 a.m. The running time of the "Senator" will be cut by 1 hr. and 10 min.

Timken Celebrates 50th Anniversary with Open House

The Timken Roller Bearing Company commemorated its golden anniversary at Canton, Ohio, June 20-24, by opening its facilities to all who cared to visit and inspect its plants in the Canton area. Special tours were conducted at frequent intervals to show visitors the steps involved in manufacture, testing and inspection of roller bearings and other Timken products. Interspersed among the technical sights were other displays which dramatized the taxes paid by Timken, as compared with what the federal government spends and in terms of the machinery this tax money could buy.

The tours began in the main tool room,



Typical of the sights witnessed by visitors to the open house was the machining operation forming a double-end cone

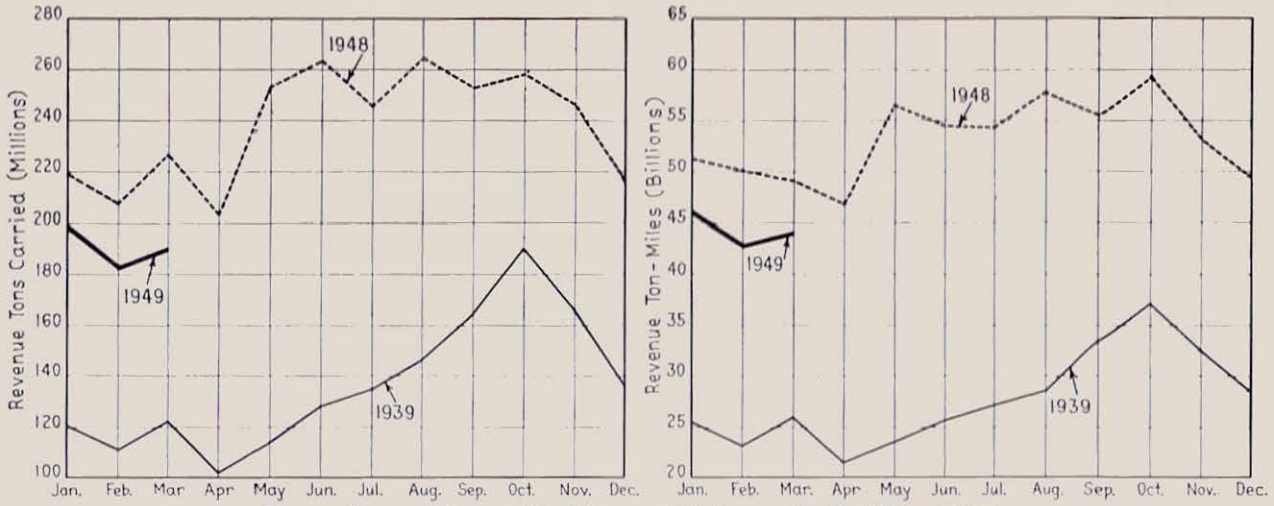
and continued to the hardening, carburizing and grinding departments. The next steps were the cage stamping department, the bearing assembly department, and the bearing inspection departments. The tour continued from the latter point through the industrial bearing and cup inspection departments.

After viewing the shipping department, the visitors then saw the railway display, which featured such recent applications of Timken bearings as those on 50 new 50-ton freight cars for the Great Northern and 40 for the Atchison, Topeka & Santa Fe. The special grinding department was also of particular interest to railway visitors.

The bearing manufacture portion of the tour was concluded in the roll gaging and roll grinding departments, after which the visitors witnessed the manufacture of Timken alloy steel at the Canton Melt Shop, and then boarded buses for the Gambrinus bearing factory, where cups, cones, large rolls and other bearing parts are made. This plant is located a few miles from the main Canton plant and is served by the Timken-owned railroad between the two.

TAXES $58,179.00
This looks like a lot of money BUT
the Federal Government will spend
2974.9 times this much today
$173,076,920.00 IN ONE DAY

Several of the non-technical exhibits emphasized the present high level of taxation



Revenue Tons and Revenue Ton-Miles — 1949 Compared with 1939 and 1948

Freight Car Loadings

Loadings of revenue freight in the week ended June 18, during which there was a work stoppage in the coal mines, totaled 649,351 cars, the Association of American Railroads announced on June 23. This was a decrease of 158,805 cars, or 19.7 per cent, below the preceding week, a decline of 257,280 cars, or 28.4 per cent, under the corresponding week last year, and a drop of 251,945 cars, or 28.0 per cent, under the equivalent 1947 week. Loadings of coal accounted for only 36,855 cars during the week, a decrease of 149,231 cars below the previous week, and a decrease of 167,704 cars below the comparable 1948 week.

Loadings of revenue freight for the week ended June 11 totaled 808,156 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, June 11

District	1949	1948	1947
Eastern	142,995	160,784	162,014
Allegheny	168,552	184,337	192,278
Pocahontas	69,786	76,282	74,424
Southern	119,174	139,298	135,679
Northwestern	130,556	135,197	131,402
Central Western	119,500	138,720	131,358
Southwestern	57,593	71,745	68,737
Total Western Districts	307,649	345,962	331,497
Total All Roads	808,156	906,663	895,292
Commodities:			
Grain and grain products	49,400	52,254	48,811
Livestock	7,951	11,800	12,985
Coal	186,086	203,124	191,680
Coke	13,052	14,813	13,361
Forest products	40,355	48,576	47,362
Ore	80,219	82,145	78,901
Merchandise l.c.l.	91,992	105,561	115,535
Miscellaneous	339,101	388,390	386,657
June 11	808,156	906,663	895,292
June 4	698,824	821,206	900,747
May 28	784,824	901,757	830,205
May 21	773,911	879,177	890,605
May 14	771,736	846,945	888,208
Cumulative total 23 weeks	16,639,506	18,275,233	19,234,732

In Canada.—Carloadings for the week ended June 11 totaled 72,736 cars, compared with 73,970 cars for the previous week, and 75,229 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
June 11, 1949	72,736	31,136
June 12, 1948	75,229	31,949
Cumulative totals for Canada:		
June 11, 1949	1,663,778	729,102
June 12, 1948	1,703,513	815,590

Smucker Proposes That New York Buy Long Island Branch

Immediate purchase of the Rockaway Beach branch of the Long Island by the city of New York for operation as part of the New York Transit System is urged by David E. Smucker, trustee and chief operating officer of the Long Island, in the June, 1949, annual number of the Rockaway Review, official organ of the Chamber of Commerce of The Rockaways.

"This is a step which should have been taken years ago," Mr. Smucker declares. He calls attention to the fact that elevated portions of the branch, constructed as part of the grade crossing elimination project completed in 1942, were built to specifications of the city's Board of Transportation so that rapid transit operation could be inaugurated at any time. When the Queens Boulevard extension of the Independent subway was carried out some 15 years ago, he notes, more than $500,000 was spent to build a depressed track, with retaining walls, to take the inbound Rockaway Beach line of the railroad under the east bound express and local tracks of the subway at Rego Park.

"Therefore, no costly construction would be necessary for the city to acquire this branch line," Mr. Smucker states. "Its purchase would involve only payment for the railroad's right-of-way and structures, and appropriation of money to buy the rapid transit cars necessary to operate the line. The financing is certainly no more difficult than that involved in expensive improvements already undertaken for the benefit of the residents of other parts of the city. . . . with the acknowledgement that the [subway] system must continue to be operated at a subsidy, it is only equitable and logical that the people of The Rockaways should derive the same direct benefits of rapid transit enoyed by their fellow citizens in other boroughs."

Mr. Smucker recalls that sale of the branch to the city was first proposed in 1925, and in 1933 a price had been fixed and a formal contract drawn. In 1934, however, the whole matter was referred back to the Board of Transportation, which has since taken no formal action.

"From the railroad's point of view," Mr. Smucker states, "sale of the branch to the city has long been desirable to relieve congestion in the East River tunnels and release 89 cars for use on other branches where the demand for railroad service is even greater. Now that ever-mounting deficits have forced the Long Island into bankruptcy, the urgent need to reduce the railroad's expenses and improve its cash position makes sale of the branch even more to be desired. But it is the people of The Rockaways who would benefit most."

Traffic Executive Association To Move New York Offices

As reported in the *Railway Age* of February 19, the Traffic Executive Association—Eastern Railroads, will move its New York offices, as of July 1, from 143 Liberty street to 1 Park avenue, New York 16. The following affiliated organizations also will move to the new location on the same date:

Coal, Coke and Iron Ore Committee;
Eastern Clergy Bureau;
Eastern Weighing and Inspection Bureau;
Freight Tariff Bureau;
Freight Traffic Committee (New York);
General Freight Traffic Committee;
Motor Carrier Bureau;
Official Classification Committee;
Trunk Line — Central Passenger Committee;
Trunk Line Interstate Commerce Law Committee.

Additional General News appears on pages 122 through 130.

EQUIPMENT AND SUPPLIES

Equipment on Order

Class I railroads and railroad-owned and controlled refrigerator car lines had 47,869 new freight cars on order June 1, compared with 111,336 on order June 1, 1948, according to the Association of American Railroads. This year's June 1, total of cars on order by all railroads and private car lines was 52,281.

New freight cars placed in service during May by Class I roads and their affiliated refrigerator car lines totaled 9,309, and this brought the total installations for the first five months of this year to 46,829 cars. The latter figure compared with a total of 41,083 cars placed in service during the first five months of 1948. This year's five-months total of locomotives installed was 863, compared with 527 in the same 1948 period.

The 47,869 cars on order June 1 by the railroads and their car-line affiliates included 23,803 to be built in railroad shops and 24,066 on order from contract builders. The breakdown by types of cars was as follows: Box, 7,934, including 7,634 plain and ventilated and 300 auto box; hoppers, 18,604, including 2,155 covered hoppers; gondolas, 12,739; flat, 4,325; refrigerator, 3,312; stock, 475; miscellaneous, 480.

Class I roads on June 1 also had on order 1,073 locomotives, including 1,039 Diesel-electrics, 30 steam and 4 electrics. On June 1, 1948, there were on order 1,596 locomotives, including 1,485 Diesel-electrics and 111 steam. The 863 locomotives placed in services during this year's first five months included 823 Diesel-electrics and 40 steam.

Freight cars retired during the first five months by Class I roads and their affiliated refrigerator car lines totaled 31,600, compared with 29,293 retired during the first five months of 1948. The May, 1949, retirements totaled 5,487 cars.

FREIGHT CARS

The **New York, Chicago & St. Louis** has ordered 200 50-ton box cars from the American Car & Foundry Co. for delivery during the fourth quarter of 1949.

LOCOMOTIVES

C. & O. Orders 146 Diesel Locomotive Units

The Chesapeake & Ohio has ordered 146 Diesel-electric locomotive units (see *Railway Age* of June 4, page 58). The Electro-Motive Division of General Motors Corporation will build 40 1,000-hp. and 20 1,500-hp. road-switching units for the Pere Marquette district, as well as 20 1,000-hp. and two 3-unit 3,000-hp. switching locomotives for the Chesapeake district. The American Locomotive Company will construct 58 1,000-hp. and two 1,500-hp. switching units, also for the Chesapeake district. A spokesman for the C. & O. said the switching locomotives for the Chesapeake district will replace a small portion of the present coal-burning motive power. The major portion of the new Diesels will be delivered this year and the remainder early in 1950.

S. P. Places $23,000,000 Diesel Locomotive Order

The Southern Pacific has placed orders for 67 Diesel-electric locomotives, comprising 151 units, and an additional 2,250-hp. Diesel-electric passenger unit, costing a total of more than $23,000,000. Included in the 67 locomotives are 28 4-unit 6,000-hp. freight locomotives to be built by the Electro-Motive Division of General Motors Corporation (which also will construct the passenger locomotive), 17 1,500-hp. road-switching locomotives to be built by the Baldwin Locomotive Works, and 22 1,000-hp. switching locomotives to be built by the American Locomotive Company. Deliveries are scheduled to begin next October and to be completed in June, 1950, at which time the S.P. will have in operation a total of 402 Diesel-electric locomotives of various types.

The **Spokane International** has ordered nine 1,000-hp. Diesel-electric road-switching locomotives from the American Locomotive Company.

The **Richmond, Fredericksburg & Potomac** has ordered 5 2-unit 4,500-hp. passenger and 5 4-unit 6,000-hp. freight Diesel-electric locomotives from the Electro-Motive Division of General Motors Corporation at an estimated total cost of $5,500,000. Delivery of the passenger locomotives is scheduled to begin next November or December and delivery of the freight locomotives is expected to begin in December.

SIGNALING

The **New York Central** has ordered from the General Railway Signal Company a 44-ft. Type B, double-rail, all-electric car retarder, to be installed at Ashtabula, Ohio.

The **Monongahela Connecting** has placed an order with the Union Switch & Signal Co. for installation of yard signaling at Elba Jct., Pa. The order involves a unit-lever control machine equipped with track diagram, 17 switch levers and 16 signal levers. Other material includes style A-5 electro-pneumatic switch machines, style N-2 color-light dwarf signals, style U-5 switch circuit controllers, relays, rectifiers, transformers and housings.

The **Union** (Pittsburgh, Pa.) has awarded a contract to the Union Switch & Signal Co. covering expansion of the present interlocking at Curry Hollow, Pa. Switches and signals will be remotely controlled from a 2½ ft. style C control machine located at BR Tower, approximately 3 mi. distant. In addition to the control machine, material includes the code equipment, style A-21 dual-control electro-pneumatic switch machines, position-light dwarf signals, relays, transformers and housings.

SUPPLY TRADE

M. J. Naughton, railway sales manager of the **Anthony Carlin Company,** Cleveland, Ohio, has resigned.

Henry V. Bootes, assistant vice-president of the **American Car & Foundry Co.** since September, 1948, has been elected vice-president in the sales department, with headquarters as before at New York. Before he joined American Car & Foundry in 1947, Mr. Bootes was district manager of the Ohio Injector Company, with the exception of four years Marine Corps combat service in the Southwest Pacific area, where he attained the rank of major.

Henry V. Bootes

The **United States Steel Supply Company** (a subsidiary of the **United States Steel Corporation**) has taken over the organization and facilities of the concrete reinforcing bar division formerly operated by the **Carnegie-Illinois Steel Corporation** (also a U. S. Steel subsidiary), at Chicago, with the following changes in personnel: **George O. With,** who headed the bar division for Carnegie-Illinois, appointed assistant vice-president and general manager of sales in charge of the new and expanded service for U. S. Steel Supply; **Gregg A. DeLong,** formerly assistant to manager, specialty products division, Carnegie-Illinois' Pittsburgh (Pa.) sales department, appointed to the new post of assistant manager of sales; **Frank M. Waddell,** Cleveland, Ohio, **Everette C. Hunt,** Boston, Mass., and **Hal P. Kibbey,** Chicago, appointed assistant district managers at the cities named; and

Charles Wilson, St. Paul, Minn., and **William Donovan**, Pittsburgh, appointed sales engineers at those two points.

The **American Steel & Wire Co.** (a subsidiary of the **United States Steel Corporation**), on June 23, officially opened its recently completed stainless steel wire producing mill at Waukegan, Ill., which has a capacity of 500 tons a month. Nearly 1,000 guests attended the dedication ceremonies and visited the plant facilities covering 100,000 sq. ft. Equipped with newly designed machinery and employing new production techniques developed since the war, the new mill will be one of the largest single stainless steel wire producers in the world.

Roger W. Batchelder has been appointed vice-president in charge of sales of the National bearing division of the **American Brake Shoe Company**, with headquarters at St. Louis, Mo. Mr. Batchelder

Roger W. Batchelder

joined Brake Shoe in 1933. He was general purchasing agent from 1945 to 1948, and assistant to the president of the division at the time of his recent appointment. During World War II he served as a colonel with the United States Army Air Forces.

G. H. Brauburger has been appointed technical service representative for **Oakite Products, Inc.**, with headquarters at 22 Thames street, New York 6.

Hobart C. Ramsey, formerly executive vice-president of the **Worthington Pump & Machinery Corp.**, has been elected president to succeed **Clarence E. Searle**, who has been named vice-chairman of the board of directors. **Edwin J. Schwanhausser**, vice-president in charge of sales since 1945, has been elected executive vice-president, succeeding Mr. Ramsey, and **John J. Summersby**, assistant vice-president and general sales manager since 1937, has been elected vice-president in charge of sales.

The **American Institute of Bolt, Nut and Rivet Manufacturers**, Cleveland, Ohio, will change its name to the **Industrial Fasteners Institute**, effective July 1.

OBITUARY

Guilford S. Wood, who founded and operated for many years a railroad supply firm bearing his name, at Chicago, died in that city on June 14, at the age of 97.

ABANDONMENTS

Application has been filed with the Interstate Commerce Commission by:

Texas & New Orleans.—To abandon operation of its Lampasas branch between Burnet, Tex., and Lampasas, 24.3 mi. The application said the territory has not supported operation of the line and is adequately served by other agencies of transport.

ORGANIZATIONS

Splawn to Tell State Regulators About I.C.C. Waybill Studies

Interstate Commerce Commissioner Walter M. W. Splawn will discuss "the results of the I.C.C. waybills studies" at the sixty-first annual convention of the National Association of Railroad and Utilities Commissioners, which will be held at the Hotel Cleveland, Cleveland, Ohio, from August 8 through August 11. The "call" for the meeting was sent out last week by the association's secretary, Ben Smart.

It listed the Splawn talk as one of three discussions under the general heading of "Transportation Regulatory Problems." The other two will be: "Mounting Railroad Passenger Service Deficits," by Walter R. McDonald, chairman of the Public Service Commission of Georgia; and "Relative Costs of Short Haul vs. Long Haul Rail Traffic," by Ford K. Edwards, director of the I.C.C.'s Bureau of Accounts and Cost Finding.

Other proceedings of the meeting will include discussions relating to the regulation of public utility companies, and an address on "Prudent Investment," by James J. Danaher, a member of the Illinois Commerce Commission. The association's president, who will preside at the convention sessions and deliver the customary "president's address," is Justus F. Craemer, a member of the Public Utilities Commission of California. The opening session is scheduled for 2 p.m. August 8, and will be preceded by a meeting of the association's executive committee at 10:30 a.m. on that day.

The **Eastern Car Foremen's Association** will hold its annual outing and golf tournament on July 14, at the Race Brook Country Club, New Haven, Conn.

CONSTRUCTION

Atchison, Topeka & Santa Fe.—This road has awarded a contract to Sharp & Fellows Contracting Co., Los Angeles, Cal., for grading work in connection with the extension of nine sidings in the second district, Valley division.

Baltimore & Ohio.—The first unit of this road's new Mill Creek Yard facility in Cincinnati, Ohio, has been completed. This initial project, begun in September, 1947, represents an investment of more than $2,250,000, and is part of an overall $12,000,000 master program. The newly completed unit is being used as a classification yard for coal trains turned over to the B. & O. at Cincinnati from connecting southern railroads; when the overall plan is completed, it will become a westbound classification yard. The recently completed work involved the dumping of more than 1,000,000 cu. yd. of fill, relocation of Mill creek along 4,000 ft. of its length, construction of a single track railroad bridge over the creek, installation of 87,000 ft. of new track with 58 turnouts, and relocation of much existing track and many other facilities. The yard has 16 classification tracks capable of handling 1,198 cars. There are three repair tracks and a storage track for cabooses.

Illinois Central.—This road has awarded the following contracts, estimated costs of which are shown in parentheses: To G. A. Johnson & Son, Chicago, for 48-ft. extension to wheel shop at Markham yard (on southern outskirts of Chicago) and erection of a 24-ft. by 33-ft. wash and locker building ($71,900); to the W-M Corporation, Chicago, for installation of Diesel oil handling and storage facilities, together with necessary pumps and pipe lines at Markham yard, including a 500,000-gal. capacity steel tank, 48 ft. in diameter and 40 ft. high, to be erected on crushed stone foundation ($37,000); to Zitterell-Mills Company, Webster City, Iowa, for furnishing and installing, at Freeport, Ill., a 60-ft. 150-ton four-section Fairbanks, Morse & Co., track scale in reinforced concrete pit on pile foundation ($37,750); to the Ogle Construction Company, Chicago, for erection of a 400-ton concrete coaling station, replacing old frame facility, at Centralia, Ill. ($78,150); and to the Gould Construction Company, Davenport, Iowa, for replacement of three cylinder piers with reinforced concrete piers, on Yalobusha River bridge M 119-4, near Greenwood, Miss. ($40,000).

St. Louis-San Francisco.—The Mitchell Construction Company, Springfield, Mo., has begun construction of a new office building at this road's Springfield yard, at an estimated cost of $170,000.

Spokane, Portland & Seattle.—This road has awarded the following contracts, estimated costs of which are shown in

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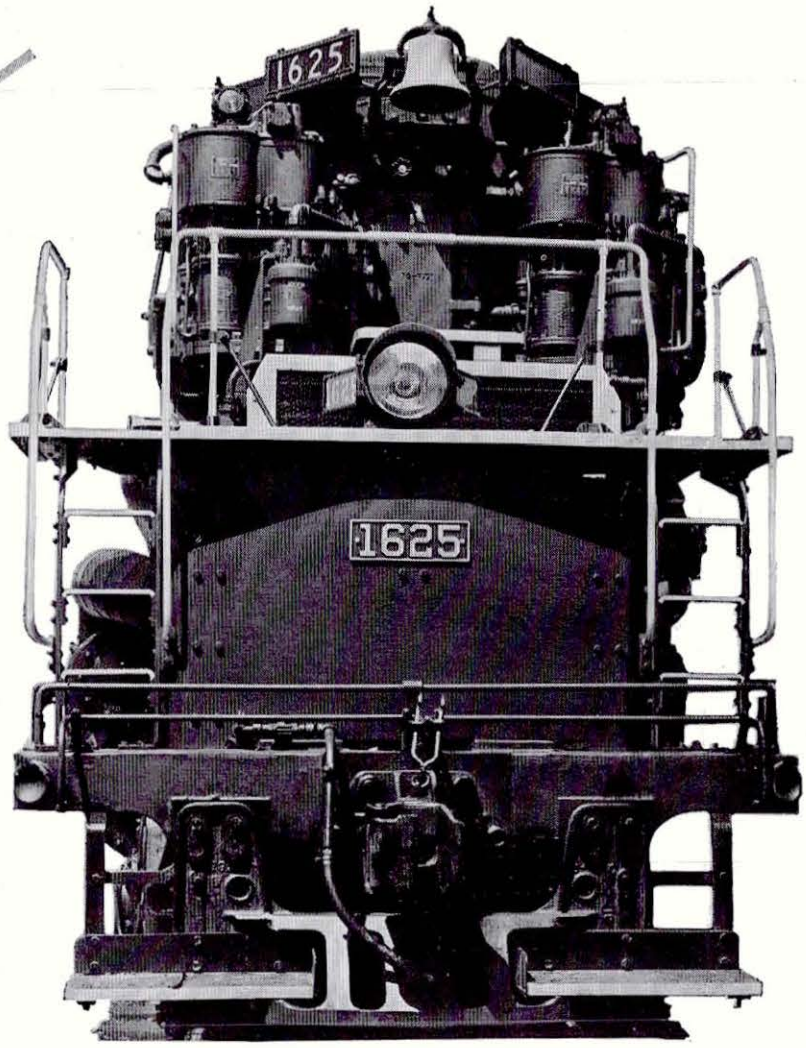
A unit of POWER



THIS LOCOMOTIVE is a unit of power. It illustrates a significant fact. Where the amount of power that can be packed into a single unit is important — where you want 6000, 8000, even 10,000 horsepower in one engine — the steam locomotive is unchallenged.

We build such locomotives — steam locomotives like this that have developed 8000 horsepower and can do more. We will continue to do so. They are fine pieces of machinery. Modern in every respect, they are establishing remarkable records for economy, reliability and low maintenance.

Don't sell these steam giants short. They have their place — and in their place are unsurpassed.

LIMA HAMILTON CORPORATION

DIVISIONS: *Lima, Ohio* — Lima Locomotive Works Division; Lima Shovel and Crane Division. *Hamilton, Ohio* — Hooven, Owens, Rentschler Co.; Niles Tool Works Co. *Middletown, Ohio* — The United Welding Co.

PRINCIPAL PRODUCTS: Locomotives; Cranes and shovels; Niles heavy machine tools; Hamilton diesel and steam engines; Hamilton heavy metal stamping presses; Hamilton-Kruse automatic can-making machinery; Special heavy machinery; Heavy iron castings; Weldments.

parentheses: To Clifton & Applegate, Spokane, Wash., for the removal, and replacement with concrete portals and lining, of 34 ft. of timber lining at each end of tunnel No. 2 on the Oregon Trunk (part of the S. P. & S.) ($33,364); to Wegman & Co., Portland, Ore., for erection of reinforced concrete Diesel shop and rearrangement of tracks, at Vancouver, Wash. ($405,516); to the General Construction Company, Portland, for filling timber trestles on the Oregon Trunk and for replacing timber trestle T 47-2 with three 65-ft. single-track deck plate girder spans ($169,500), and to Parker-Schram Company, Portland, for placing concrete drain culverts and filling timber trestles on the Veronia (Ore.) branch ($70,900).

Texas & New Orleans.—This road has applied to the Interstate Commerce Commission for authority to construct a 4½ mile extension, connecting at approximately 8.8 miles southeast of Victoria, Texas, with its existing branch line between Victoria, and Port Lavaca. The application said the proposed extension would principally serve property which is being developed by the DuPont industries.

HONOR NEW PECOS BRIDGE AS PREDECESSOR IS DISMANTLED.—The old Pecos River bridge of the Southern Pacific, near Comstock, Tex.—for many years the highest railroad bridge in the country—is currently being stripped for sale to the Guatemalan government, which plans to re-erect the span over one of the deepest streams in that country. As dismantling of the old bridge got underway on May 23, the owners, engineers and fabricators of the new Pecos bridge were on hand to receive the American Institute of Steel Construction's annual award of merit for having built the "most beautiful bridge" in its particular class in 1944 (a photograph of the bridge appeared in the *Railway Age* of November 6, 1948, page 41). R. B. Reilly, left, district engineer of the institute, presented the award to H. J. McKenzie, chief engineer of the S. P., as R. Dewaal, superintendent of the road's San Antonio (Tex.) division, stood by. The new span is 1,390 ft. 6 in. long and has both continuous and cantilever spans

FINANCIAL

Central of New Jersey.—*Modification of Securities.*—The Interstate Commerce Commission has approved this road's amended plan for modification of some of its outstanding securities under the so-called Mahaffie Act (section 20b of the Interstate Commerce Act). The amended plan was submitted to the commission when it became apparent that holders of a "substantial number" of shares of the affected common stock were unwilling to assent to the original plan which had been approved by the commission in a previous report. The amended plan was outlined in the *Railway Age* of June 11, page 62. The present commission report authorizes its submission to security holders found eligible to vote for its acceptance or rejection.

Des Moines & Central Iowa.—*Reorganization.*—Division 4 of the Interstate Commerce Commission has approved maximum limits, aggregating $5,305.24, of allowances for the actual and reasonable expenses (exclusive of attorney's fees and expenses to be incurred by the reorganization manager) in consummating this road's reorganization plan.

Duluth, South Shore & Atlantic.—*Reorganization.*—Division 4 of the Interstate Commerce Commission has approved maximum limits, aggregating $32,250, of allowances for the actual and reasonable expenses (exclusive of fees and expenses of counsel) to be incurred by this road's reorganization managers in consummating its plan of reorganization.

Lackawanna & Wyoming Valley.—*Mahaffie-Act Application Dismissed.*—Division 4 of the Interstate Commerce Commission has dismissed this road's application for approval of a plan to modify its securities under provisions of the so-called Mahaffie Act, now section 20b of the Interstate Commerce Act. The dismissal order was issued after the applicant had advised the commission of its desire to withdraw the application, and the dismissal is "without prejudice in future proceedings to the applicant or to any of the intervening parties." (See *Railway Age* of June 4, page 60).

Pennsylvania.—*Proposes Lease Modifications.*—This company has called a special meeting of its stockholders for September 20 to act on proposed modifications of leases between it and 22 lessor railroad companies included in its system and in which it owns or controls a substantial stock interest. The modifications, if approved by the stockholders and the Interstate Commerce Commission, will result in a reduction in federal income taxes, according to the proxy statement mailed to stockholders. The statement noted that certain technical provisions of the federal income tax laws "result in imposing tax burdens on the company which are inequitable. This is especially true with respect to the provisions governing depreciation of physical properties owned by the leased lines but operated by your company. In the absence of legislative relief, the deduction for this depreciation, in lieu of retirement losses, may be obtained only by modifying the leases involved. . . . While the structures upon these lines are subject to normal wear and tear, neither the lessor companies nor your company may deduct depreciation for federal income tax purposes." Supplemental agreements approved by directors and to be submitted to stockholders would modify the leases now in effect—many of which are for 999-year terms—to provide for current accounting on and after January 1, 1949, with respect to depreciation, amortization and certain retirements.

New Securities

Applications have been filed with the Interstate Commerce Commission by:

Atlantic Coast Line.—To assume liability for $8,685,000 of equipment trust certificates, the second and final installment of a proposed, $19,350,000 issue, the proceeds of which are being applied toward the purchase of 2,945 freight cars, 18 Diesel-electric locomotives, and 44 passenger-train cars estimated to cost about $21,500,000 (see *Railway Age* of February 5, page 118). The certificates would be dated March 1, would mature in 15 annual installments of $579,000 each, beginning March 1, 1950, and would be sold on competitive bids.

Baltimore & Ohio.—To assume liability for $4,440,000 of series AA equipment trust certificates to finance in part the following equipment:

	Description and Builder	Estimated Unit Cost
10	6-bedroom, 10-roomette lightweight sleeping cars (Pullman Standard Car Manufacturing Co.)	$150,000

News Department continued on second left-hand page

The *Elesco* Controlled* Re-circulation Steam Generator

FOR TRAIN HEATING

*A re-circulation rate of 10 times the maximum steam output increases heat absorption, improves efficiency and results in scale-free heating surface for extended periods.

Tried and proved by 3,000 applications of various capacities.

THE
SUPERHEATER CO.
Division of
COMBUSTION ENGINEERING-
SUPERHEATER, INC.
Representative of AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
122 S. Michigan Ave., CHICAGO
Montreal, Canada, THE SUPERHEATER COMPANY, Ltd.

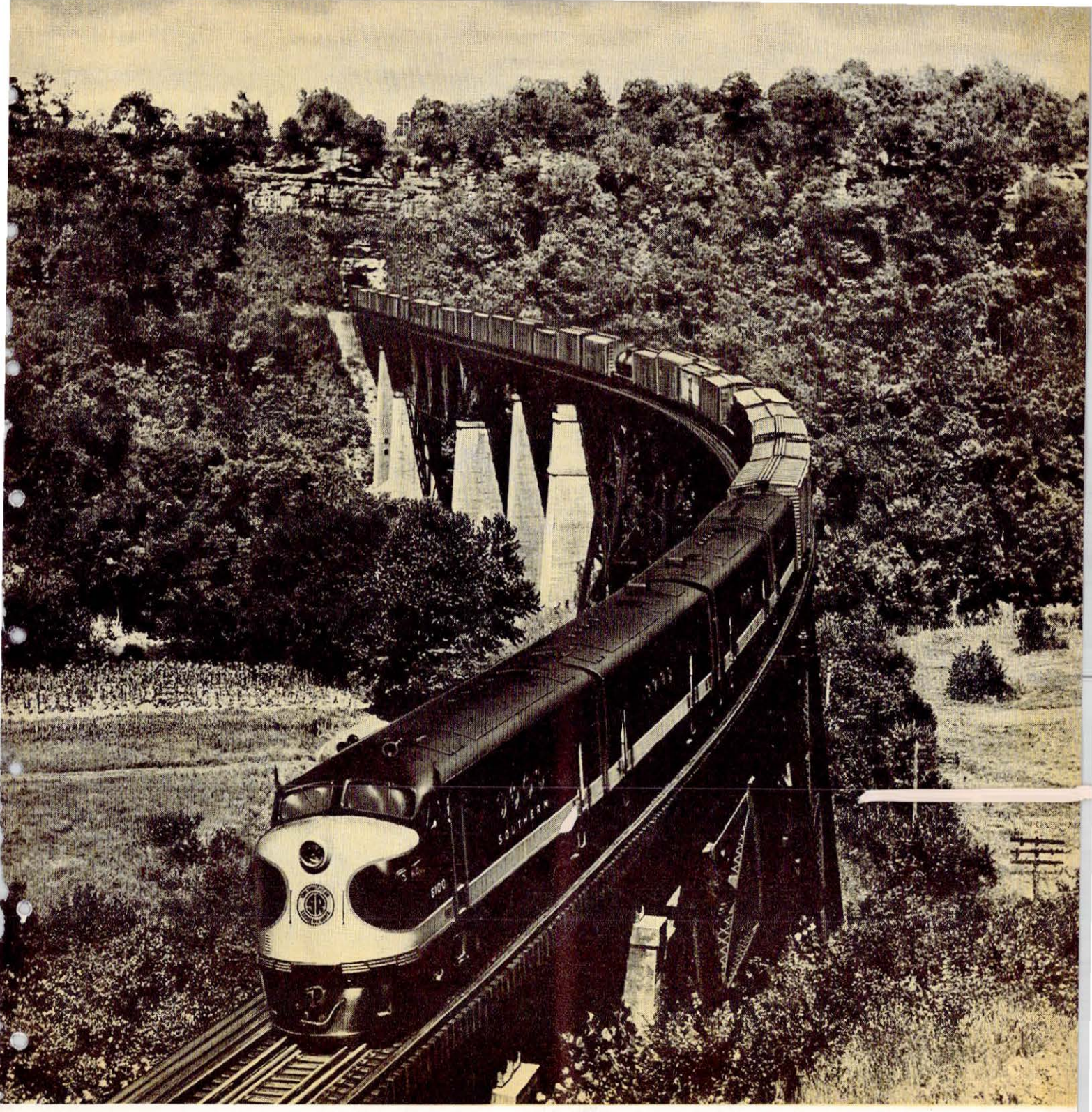
Superheaters • Superheater Pyrometers • Exhaust Steam Injectors • Steam Dryers • Feedwater Heaters • Steam Generators • Oil Separators • American Throttles

8% of the Locomotives— 46% of the Work

As of December 31, 1948, 8.18 per cent of the Southern Railway System's freight locomotives were Diesels—all General Motors units. Last year they handled 46.93 per cent of the gross ton-miles.

Remarkable?

Yes, but not unusual with General Motors Diesels.



The Southern's Diesel roster, one of the country's largest, includes the first successful Diesel road freight locomotive built—the four-unit 5400 h.p. General Motors demonstrator locomotive placed in service by the Southern in May, 1941, after a tour of the nation's rail lines. It is shown here crossing the Cumberland River Bridge in Kentucky en route to the South.

ELECTRO-MOTIVE

DIVISION OF GENERAL MOTORS LA GRANGE, ILLINOIS

GENERAL MOTORS LOCOMOTIVES

Home of the Diesel Locomotive

7	6,000-hp. Diesel-electric freight helper locomotives, each consisting of 2 1,500-hp. "A" units and 2 1,500-hp. "B" units (General Motors Corporation, Electro-Motive Division)	632,418

Total estimated cost of all the equipment is $5,926,926. The certificates would be dated July 1, would mature in 15 annual installments of $296,000, beginning July 1, 1950, and would be sold on competitive bids with the interest rate fixed by such bids.

Chicago & North Western.—To assume liability for $6,600,000 of equipment trust certificates to finance in part the acquisition of the following equipment:

	Description and builder	Estimated Unit Cost
32	1,500-hp. Diesel-electric freight locomotives (General Motors Corporation, Electro-Motive Division)	$173,730
13	1,500-hp. Diesel-electric freight locomotives (Electro-Motive)	151,170
4	1,000-hp. Diesel-electric switching locomotives (Fairbanks, Morse & Co.)	97,985
2	2,000-hp. Diesel-electric transfer locomotives (Electro-Motive)	198,875

Total estimated cost of all of the equipment is $8,314,260. The certificates would be dated August 1, and would be sold on competitive bids, which would specify the interest rate, and determine whether the issue would mature over a 10-year or 15-year period.

New York Central.—To assume liability for $11,400,000 of equipment trust certificates to finance in part the acquisition of the following equipment:

	Description and builder	Estimated Unit Cost
500	70-ton high-side steel gondola cars (Greenville Steel Car Company)	$6,140
100	70-ton high-side steel gondola cars (Greenville)	6,720
1,500	55-ton self-clearing steel hopper cars (Despatch Shops, Inc.)	4,020
500	55-ton self-clearing steel hopper cars (American Car & Foundry Co.)	4,540
12	1,000-hp. Diesel-electric switching locomotives (American Locomotive Company)	98,800
6	2,000-hp. Diesel-electric "A" unit road freight locomotives (Fairbanks, Morse & Co.)	217,800

Total estimated cost of all of the equipment is $14,534,400. The certificates would be dated July 15 and would mature in 15 annual installments of $760,000 each, beginning July 15, 1950. They would be sold on the basis of competitive bids and the interest rate would be fixed by such bids.

Division 4 of the I.C.C. has **authorized:**

Chicago & Eastern Illinois.—To assume liability for $1,800,000 of series "G" equipment trust certificates to finance in part the acquisition of the following equipment:

	Description and builder	Estimated Unit Cost
10	1,500-hp. Diesel-electric road locomotives (Electro-Motive Division, General Motors Corporation)	$174,094
4	1,000-hp. Diesel-electric switching locomotives (Electro-Motive)	97,650
15	All-steel caboose cars (Company shops)	7,897

Total estimated cost of all of the equipment is $2,250,000. The certificates were sold on the basis of competitive bidding subject to the approval of the Interstate Commerce Commission. The highest bid of 99.034 with a 2⅝ per cent interest rate was made by Salomon Bros. & Hutzler and associates. The certificates will be dated July 1, and mature in 30 semiannual installments of $60,000 each, beginning January 1, 1950. The certificates were reoffered to the public at prices yielding from 1.4 to 2.9 per cent, according to maturity.

Chicago, Rock Island & Pacific.—To assume liability for $3,120,000 of equipment trust certificates to finance in part 19 Diesel-electric locomotive and 450 freight cars at an estimated cost of $4,177,750 (see *Railway Age* of May 28, page 58). The certificates will be dated July 1 and will mature in 24 semiannual installments of $130,000 each, beginning January 1, 1950. The commission's report approved a selling price of 99.463 with a 2⅛ per cent interest rate—the bid of Harris, Hall & Co., which will make the average annual interest cost approximately 2.22 per cent. The certificates were reoffered to the public at prices yielding from 1.25 to 2.425 per cent, according to maturity.

Reading.—To assume liability for $3,700,000 of equipment trust certificates to finance in part the acquisition of 15 Diesel-electric switching locomotives and 750 50-ton hopper cars at an estimated total cost of $4,700,000 (see *Railway Age* of May 28, page 58). The certificates, dated June 15, will mature in 20 semi-annual installments of $185,000 each, beginning December 15. The commission's report approved a selling price of 99.3035 with a 2 per cent interest rate—the bid of Lee Higginson Corporation and 33 associates, which will make the average annual interest cost approximately 2.15 per cent. The certificates were reoffered to the public at prices yielding from 1.25 to 2.35 per cent, according to maturity.

Seaboard Air Line.—To assume liability for $3,435,000 of series F equipment trust certificates to finance in part 23 Diesel-electric road switching locomotives and nine lightweight, stainless steel sleeping cars. The latter will include six cars of the 6-double-bedroom, 10-single-bedroom type and three of the 6-double-bedroom, buffet-lounge type. It was stated erroneously that 12 sleeping cars (six of each type) were being acquired in the report of the filing of this application which appeared in the *Railway Age* of May 28, page 58. The certificates, dated June 1, will mature in 15 annual installments of $229,000 each, beginning June 1, 1950. The commission's report approved a selling price of 99.63 with a 2⅜ per cent interest rate—the bid of Salomon Bros. & Hutzler and three associates, which will make the average annual interest cost approximately 2.44 per cent. The certificates were reoffered to the public at prices yielding from 1.4 to 2.65 per cent, according to maturity.

Southern.—To assume liability for $7,500,000 of series RR equipment trust certificates to finance in part 88 passenger-train cars expected to cost a total of $10,000,000 (see *Railway Age* of May 28, page 58). The certificates will be dated June 15 and will mature in 30 semiannual installments of $250,000 each, beginning December 15. The commission's report approved a selling price of 99.7935 with a 2½ per cent interest rate—the bid of Halsey, Stuart & Co., which will make the average annual interest cost approximately 2.53 per cent. The certificates were reoffered to the public at prices yielding from 1.25 to 2.725 per cent, according to maturity.

Dividends Declared:

Canadian Pacific.—4% non-cumulative preference, 2% (payable in Canadian funds), semiannual, payable August 1 to holders of record July 1.

Copper Range.—5% non-cumulative preferred, $5.00, payable August 22 to holders of record July 22.

New London Northern.—$1.75, quarterly; extra 25¢, both payable July 1 to holders of record June 15.

Northern Central.—$2.00, semiannual, payable July 15 to holders of record June 30.

Average Prices Stocks & Bonds

	June 21	Last week	Last year
Average price of 20 representative railway stocks	36.63	35.47	54.71
Average price of 20 representative railway bonds	83.94	83.49	91.03

RAILWAY OFFICERS

EXECUTIVE

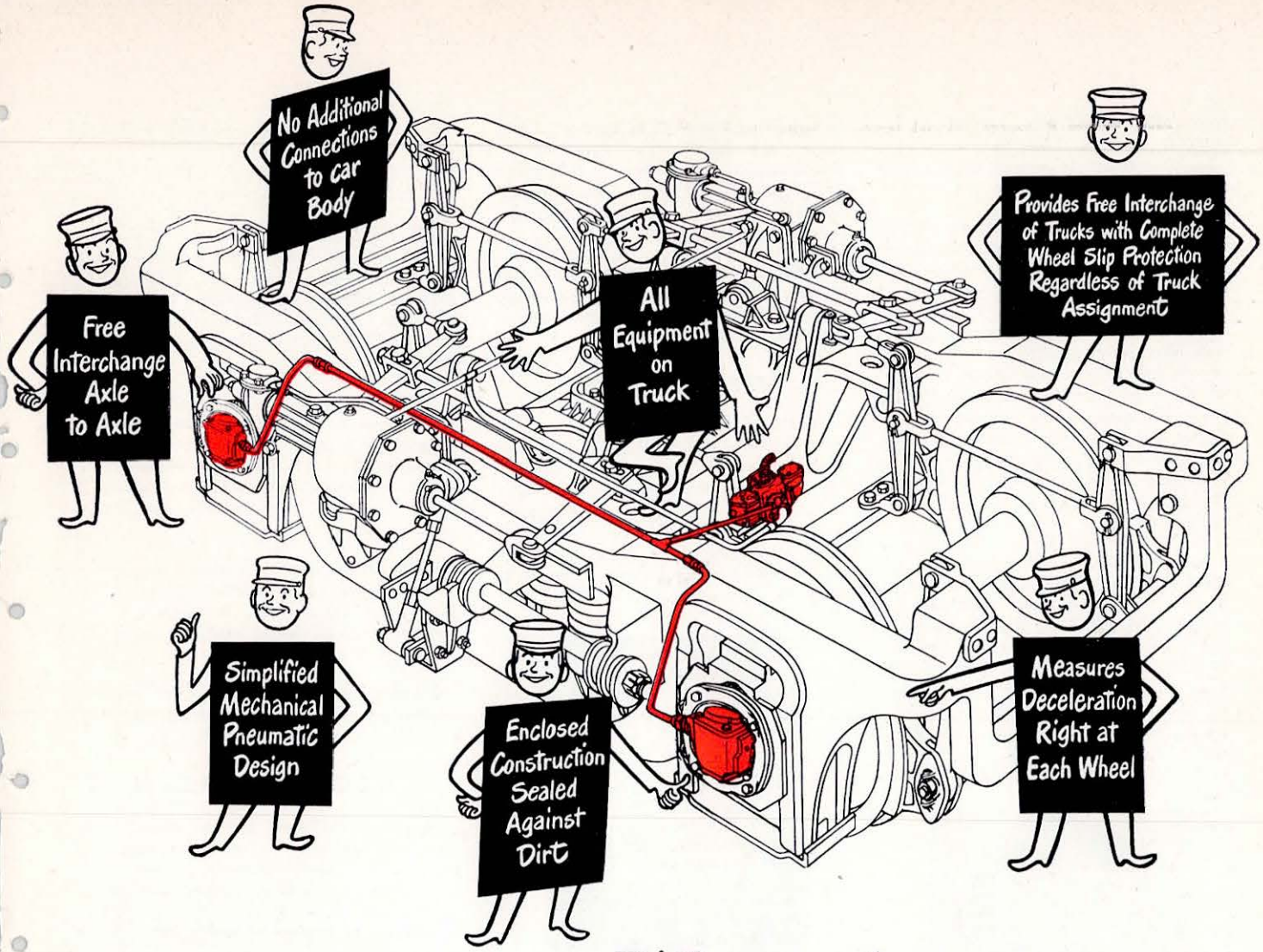
Maurice G. Roberts, vice-president and general counsel of the St. Louis-San Francisco at St. Louis, Mo., will retire on July 1, after more than 37 years of railroad service. He will be succeeded by **Eugene G. Nahler,** general solicitor at that point.

Chester J. Jump, whose appointment as assistant to president of the Railway Express Agency at New York was reported in the *Railway Age* of June 11, was born at Elliston, Ky., and began his express career at Cincinnati, Ohio, becoming auditor of disbursements at Philadelphia, Pa., in 1922. Three months later he was transferred to the executive offices at New York and served as chief clerk to the general auditor, until May 1, 1935, when he became special representative of the vice-president in charge of accounting. On September 1, 1941, Mr. Jump became assistant to vice-president, accounting, which position he held until his recent promotion.

Chester J. Jump

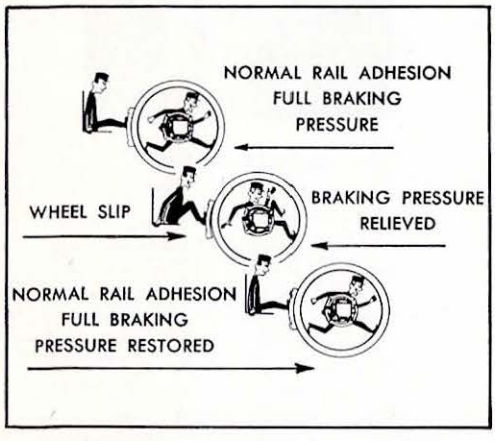
Paul Gross, Jr., general auditor of the Railway Express Agency at Chicago, has been appointed assistant to vice-president at New York, succeeding **Chester J. Jump,** who has been promoted to assistant to president. **Raymond C. Tischhouser,** assistant to vice-president at New York, has been appointed general auditor at Chi-

News Department continued on next left-hand page


No Additional Connections to Car Body
Free Interchange Axle to Axle
All Equipment on Truck
Provides Free Interchange of Trucks with Complete Wheel Slip Protection Regardless of Truck Assignment
Simplified Mechanical Pneumatic Design
Enclosed Construction Sealed Against Dirt
Measures Deceleration Right at Each Wheel

the figures tell the story of Westinghouse

AP DECELOSTAT ADVANTAGES



Millions of miles of travel without sliding a wheel have been reported by railroads with Westinghouse AP Mechanical-Pneumatic Decelostat installations. The dollar value of this performance, in terms of reduced wear on equipment and maintenance of maximum braking efficiency under all rail conditions, makes it an impressive return on investment.

As all equipment is on the truck, and no additional connections to car body, free assignment of trucks is possible. Enclosed, dirt-sealed construction enhances integrity of operation. Simplified mechanical-pneumatic design acts positively—relieves brake pressure at the first hint of wheel slip.

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cago. **William P. Carron,** special representative at New York, has been appointed assistant to vice-president, succeeding Mr. Tischhouser.

Carl A. Taylor, general manager of the Chesapeake district of the Chesapeake & Ohio at Richmond, Va., has been elected vice-president and general manager—Chesapeake district. **Charles J. Geyer,** assistant vice-president at Richmond, has been elected vice-president—maintenance of way and construction—system, which embraces the Pere Marquette and Chesapeake districts. The new posts of Messrs. Taylor and Geyer cover functions previously supervised substantially by **A. T. Lowmaster,** executive vice-president, who is retiring after nearly a half century of railroad service.

James F. Ross, whose appointment as assistant to the president of the Railway Express Agency at New York was reported in the *Railway Age* of June 11, was born at Everett, Mass., on October 4, 1890, and entered the service of the American Express Company (predecessor of R.E.A.) as a clerk at Boston, Mass., where he served in various capacities, rising to superintendent of terminals. In 1923, Mr. Ross was called to New York

James F. Ross

for an assignment in efficiency and organizational work in the Eastern departments. He was named special representative on July 1, 1929, and superintendent of organization on April 1, 1933. He was appointed assistant to vice-president on December 1, 1936, and on January 1, 1939, became general manager of the New York City departments, in which capacity he served until his recent promotion.

FINANCIAL, LEGAL & ACCOUNTING

T. F. Hamer, general solicitor of the Union Pacific at Omaha, Neb., will retire from service on July 1. Mr. Hamer, who is a native of Kearney, Neb., was graduated from the University of Nebraska Law School in 1899, and later practiced law in his home town. In 1909, he became local attorney at Kearney for the U. P., and subsequently served as attorney and general attorney at that point until 1936, when he was transferred to Omaha as general attorney. He was appointed general solicitor in 1942.

Charles D. Miller, assistant to the insurance manager of the New York, Chicago & St. Louis, has been promoted to assistant insurance manager.

OPERATING

Paul T. Webber, superintendent of the Southern New England division of the Railway Express Agency at Providence, R. I., has been promoted to general manager of the Northeastern department, with headquarters at Boston, Mass. Mr. Webber was born at North Brookfield, Mass., and began his express career as a clerk at Springfield, Mass., later serv-

Paul T. Webber

ing at Worcester, Mass., in various capacities, including that of general agent. He went to New York in April, 1934, to serve on the staff of the vice-president and became superintendent of organization there three years later. Shortly afterward he became superintendent of the Eastern New York division at Albany, N. Y., later transferring to Baltimore, Md. Mr. Webber became superintendent of the Southern New England division in September, 1941.

TRAFFIC

H. H. Wilke, assistant general agent of the Chicago & Eastern Illinois at Chicago, has been appointed general agent at that point, his former post being abolished.

Harry Teft Harlow, whose retirement as general passenger agent of the Erie at Chicago, was reported in the *Railway Age* of June 18, was born in that city on September 24, 1884. After attending high school and Louisville Business College, he entered railroad service with the Erie in 1904, as assistant ticket agent at Cleveland, Ohio. The following year he was appointed assistant passenger agent at Chicago, where he remained until 1906, when he became traveling passenger agent, with headquarters at Memphis, Tenn. He later held the same position at Kansas City, Mo. He was appointed city passenger agent at Cincinnati, Ohio, in 1909, and was transferred to Chicago in that capacity in 1913. In 1924 Mr. Harlow was promoted to general western passenger agent at Chicago and in 1928, he became general passenger agent.

Frank W. Werner, assistant fuel traffic manager of the Chicago, Burlington & Quincy at Chicago, will become division freight agent at Lincoln, Neb., effective July 1, succeeding **Norman E. Kerns,** who will retire after 51 years of railroad service.

F. D. Kelley, district manager, public relations and sales, Railway Express Agency, at Atlanta, Ga., has been appointed assistant traffic manager, with headquarters at New York.

Clarence M. Carlson has been appointed general agent of the Akron, Canton & Youngstown at Pittsburgh, Pa.

MECHANICAL

Edward L. Bachman, general superintendent of motive power of the Pennsylvania at New York, who was granted a leave of absence on May 1, as reported in the *Railway Age* of May 7, will retire on August 31, after more than 47 years of

Edward L. Bachman

service. Mr. Bachman was born at Coshocton, Ohio, on January 24, 1881, and was educated in the public schools there. He worked briefly for the East Ohio Gas Company and the Keagy & Lear Machine Co., during which period he completed a course in steam engineering with the International Correspondence School. Mr. Bachman entered railroad service in 1902 as a machinist at the Dennison, Ohio, shops of the Pennsylvania and later worked at various points on the system as enginehouse foreman, master mechanic and in other supervisory positions. He became general superintendent motive

News Department continued on next left-hand page

Improved MAGNUS BEARINGS *Modern*

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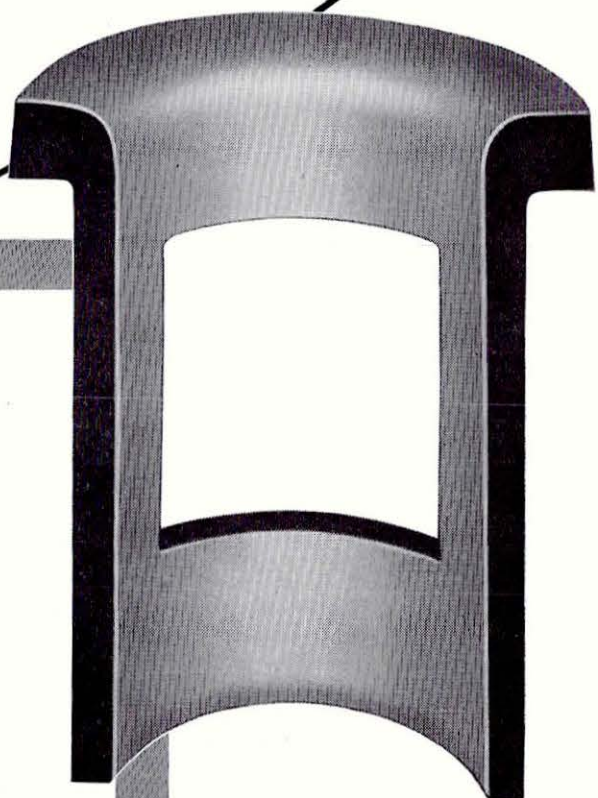
MAGNUS SATCO-LINED DIESEL MOTOR-SUPPORT BEARINGS



Because Diesel Locomotive Motor-Support Bearings are subjected to especially severe service in high-speed Passenger and heavy-tonnage Freight service, they require a *Higher Factor of Safety* than conventional bearings.

Magnus Satco-lined Motor Support Bearings have the necessary *Higher Factor of Safety. Satco Bearing Metal* has a *150 deg. F. higher melting point* than lead and tin-base Babbitt, as well as *greater hardness* when subjected to above-normal temperatures.

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power of the New York Zone on December 1, 1936, and was in charge of the repair, maintenance and servicing of all locomotives and other rolling stock for both the Long Island and the New York division of the Pennsylvania until May 1.

A. V. Nystrom, formerly assistant general superintendent, locomotive and car departments, Chicago, Milwaukee, St. Paul & Pacific, at Milwaukee, Wis., has been appointed assistant to the general superintendent of motive power of the Chicago, Rock Island & Pacific at Chicago, with jurisdiction over all mechanical matters.

PURCHASES & STORES

J. N. Wandell, traveling storekeeper of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Milwaukee, Wis., has been promoted to assistant general storekeeper at that point. **L. V. Schwartz,** division storekeeper at Savanna, Ill., has been appointed district storekeeper at the Milwaukee (Wis.) shops, succeeding **G. A. J. Carr,** who has been transferred to Savanna to replace Mr. Schwartz.

ENGINEERING & SIGNALING

V. S. Fowlow, assistant division engineer, Montreal terminals, Canadian National, has been appointed division engineer of the Cochrane division, with headquarters at Cochrane, Ont., succeeding **A. D. W. Cuthbert,** who has retired on pension.

M. G. Harris, chief draftsman, Chicago terminal division, of the Pennsylvania, has been appointed assistant engineer, office of chief engineer, maintenance of way, western region, succeeding the late **P. S. Bazler.**

John S. Knight, assistant regional engineer of the Baltimore & Ohio Chicago Terminal, at Chicago, has been promoted to regional engineer, construction and maintenance, with the same headquarters, succeeding **Guy Prescott Palmer,** whose retirement was reported in the *Railway Age* of June 11.

SPECIAL

C. D. Fabrin has been appointed manager of time service of the Southern Pacific, with headquarters at San Francisco, Cal., succeeding the late **Stanley A. Pope.**

OBITUARY

Stanley A. Pope, manager of time service of the Southern Pacific, with headquarters at San Francisco, Cal., died recently.

B. D. Landau, auditor of miscellaneous accounts of the Union Pacific, with headquarters at Omaha, Neb., died recently at his home in Council Bluffs, Iowa. Mr. Landau, who was born on June 27, 1891, at Kanona, Kan., entered U. P. service at Omaha in 1917, as a clerk in the accounting department. He was promoted to chief clerk of miscellaneous accounts in 1935, and became auditor of miscellaneous accounts in February, 1948.

O. H. McFarlin, late division superintendent of the Illinois Central at Memphis, Tenn., whose death was reported in the *Railway Age* of June 11, was born on March 25, 1886, at Medina, Tenn., where he was graduated from high school in 1905. He entered I. C. service in May of the same year as a telegraph operator at Greenfield, Tenn., and later held that position at Dyersburg, Tenn., until 1906, when he became agent-operator on the Tennessee division. In 1914 he was appointed dispatcher and later was made extra chief dispatcher at Fulton, Ky. From 1926 to 1942 he served as trainmaster, successively, of the Fulton district, Fulton, Ky., the Chicago district, Champaign, Ill., and the Memphis division, Memphis. Mr. McFarlin was subsequently promoted to assistant superintendent of the Memphis division, being advanced to division superintendent in 1944.

W. J. Mallon, superintendent of way and structures, Chicago South Shore & South Bend, with headquarters at Michigan City, Ind., died recently.

Edward E. Bashford, who retired in 1937 as vice-president of the National of Mexico, with headquarters at New York, died at the Northern Westchester Hospital, Mount Kisco, N. Y., on June 15, at the age of 80.

Edward W. Scheer, who retired on June 30, 1944, as president of the Reading and chief executive officer of the Central of New Jersey, died on June 16 at a rest home in suburban Tacoma Park, Washington, D. C., after having been ill for more than a year. Mr. Scheer was born at Zaleski, Ohio, on April 28, 1875, and entered railroad service in 1890 with the Baltimore & Ohio as office boy. After serving in various capacities with the Baltimore & Ohio Southwestern (now B.&O.) and the Baltimore & Ohio, Mr. Scheer served as vice-president of the Reading from 1932 to 1935 and as vice-president of the Central of New Jersey from 1933 to 1935. He was president and director of the Reading from December 27, 1935, until his retirement on June 30, 1944, and also served as president and director of the C.N.J. from December, 1935, to January, 1940, holding the title of chief executive officer and director of the latter company from January, 1940, until his retirement.

Frank I. Snyder, president of the Bessemer & Lake Erie, with headquarters at Pittsburgh, Pa., died on June 18 from injuries sustained the evening before when an automobile, in which Mr. Snyder and Charles J. Graham, president of the Pittsburgh & West Virginia, were returning to Pittsburgh from Erie, Pa., was wrecked. Mr. Graham was seriously injured.

Mr. Snyder was born at Greenville, Pa., on December 12, 1883, and entered railroad service in 1903 as stenographer to assistant trainmaster of the Pennsylvania at Pittsburgh, in which capacity he served until 1904. He then served as clerk in the traffic department of the Carnegie Steel Company at Pittsburgh until 1905, when he became clerk to general superintendent of passenger transportation of the Pennsylvania Lines West of Pittsburgh. From 1906 to 1927 Mr. Snyder served the Bessemer & Lake Erie successively as secretary, chief clerk, office assistant and assistant to vice-president and general manager, assistant general manager and general manager at Pittsburgh. He was office assistant to federal manager of the company from 1918 to 1920, during federal control. In 1927 Mr. Snyder was appointed vice-president and general manager at Pittsburgh, which position he held until his election to the presidency in October, 1946.

Frank I. Snyder

Floyd W. Crow, vice-president and general manager of the Merchants Despatch Transportation Corporation and the Northern Refrigerator Line, at Chicago, died on June 15, at Evanston (Ill.) hospital. Mr. Crow was born at Morrill, Kan., on March 8, 1891, and began his railroad career in December, 1910, as a stenographer with the Illinois Central. He subsequently held the positions of reconsigning clerk and traveling agent with the I. C. and, from 1919 to 1923, served as general supervisor of refrigeration with the New York Central. He next joined the Merchants Despatch Transportation Corporation in the same capacity, and in 1925 was appointed superintendent of refrigeration. Mr. Crow became superintendent of Merchants Despatch in 1937, and general superintendent of that corporation, as well as of the Northern Refrigerator Line, in 1940. He was further promoted to vice-president and general manager in November, 1944.

News Department continued on next left-hand page

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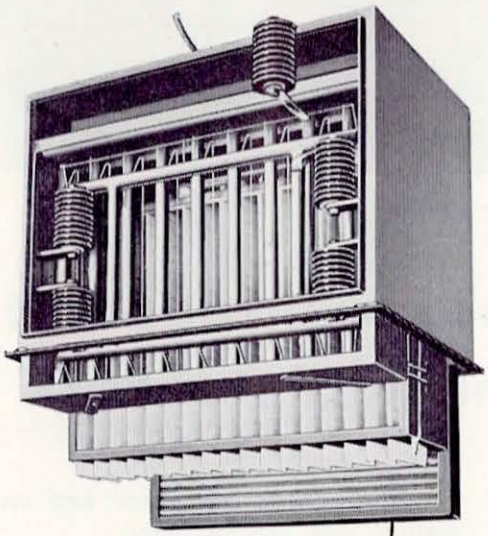

- Cleaning efficiency more than 10 times greater than the average of standard mechanical filters.
- Average cleaning efficiency 90% in cases of atmospheric dust and tobacco smoke—Bureau of Standards Discoloration Test Method.
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GENERAL NEWS

(Continued from page 104)

his point, the "higher you go" in the committee set-up, the "fewer r ads participate." All the applicants had proved, Mr. Dumbauld said, was that there ought to be arrangements for hearings on and publicity for proposed rate changes; and he insisted that such arrangements can be had without relief from the anti-trust laws. Under the proposed agreement, he continued, many "meritorious" rate proposals would never see the light of day because of "abortions" performed by the bureau procedures.

Asked by Commissioner Miller if the department would leave each road to act alone in rate matters, Mr. Dumbauld said that such was not the department's position. He explained that the department thinks that no agreement contemplating immunity from the anti-trust laws (and thus requiring commission approval) is necessary for the adoption of rate-conference procedures on a proper basis. When Mr. Miller suggested that Congress thought "differently," Mr. Dumbauld replied that Congress merely provided that "if agreements require relief" from the anti-trust laws, then the need for such relief must be proved. Commissioner Johnson brought out the fact that the department had opposed the issuance of the certificate which provided relief for the war period.

Mr. Kilday first opposed Mr. Hays' suggestion that the commission should rely on its "continuing power of supervision" if experience indicated that the agreement should be modified. Those "policing" provisions were called "vague and indefinite" by the Justice Department attorney, as he advised the commission that it would be "better" to exercise its "power to prevent by withholding approval."

As to the right of independent action, Mr. Kilday cited a statement in the applicants' brief which said that the agreement's plan of having the conference procedures run their course before the right of independent action was exercised would be an "effective deterrent" to unfair and destructive competition. "Effective deterrent" meant "restraint" on independent action to Mr. Kilday. He closed his argument by assailing that feature of the plan which provides for reviews of some proposals by the "executive committee." This committee had been characterized by Mr. Dumbauld as the "governing body" of the set-up, because the Western Traffic Association is "only a name." Developing that line of argument further, Mr. Kilday said that the association "holds no meetings and the executive committee receives no instructions from the association," and thus "control is placed by the agreement in a minority of the large railroads in the west."

In rebuttal, Mr. Smith explained that every Class I road in the west, except

"about six small ones," is represented on the executive committee, either by one of its own officers or through its parent company. The other six could obtain representation any time they asked and agreed to pay their proportionate share of the committee's expenses. In view of that setup, under which "everybody is there," the name "executive committee" may be "unfortunate," Mr. Smith suggested. The applicants' counsel also explained again that any road was free to take independent action at any time—despite those provisions of the plan which contemplate that such action would be delayed until the procedures had run their course.

As to the Justice Department's contention that no agreement was necessary, Mr. Smith said that this seemed like an argument to the effect that the railroads shouldn't file a section 5a application until they could prove that they had been arrested for an anti-trust-law violation and were out on bail. He also referred to intimations by the department that it may take the case to the courts. To find the department thus "confessing error" for Congress would be a new one on Mr. Smith. Thus far, he has known only of cases wherein the department has "confessed error" for the commission when it elected not to aid the regulatory body in court proceedings.

Another Erie Commutation Tariff Suspended by I.C.C.

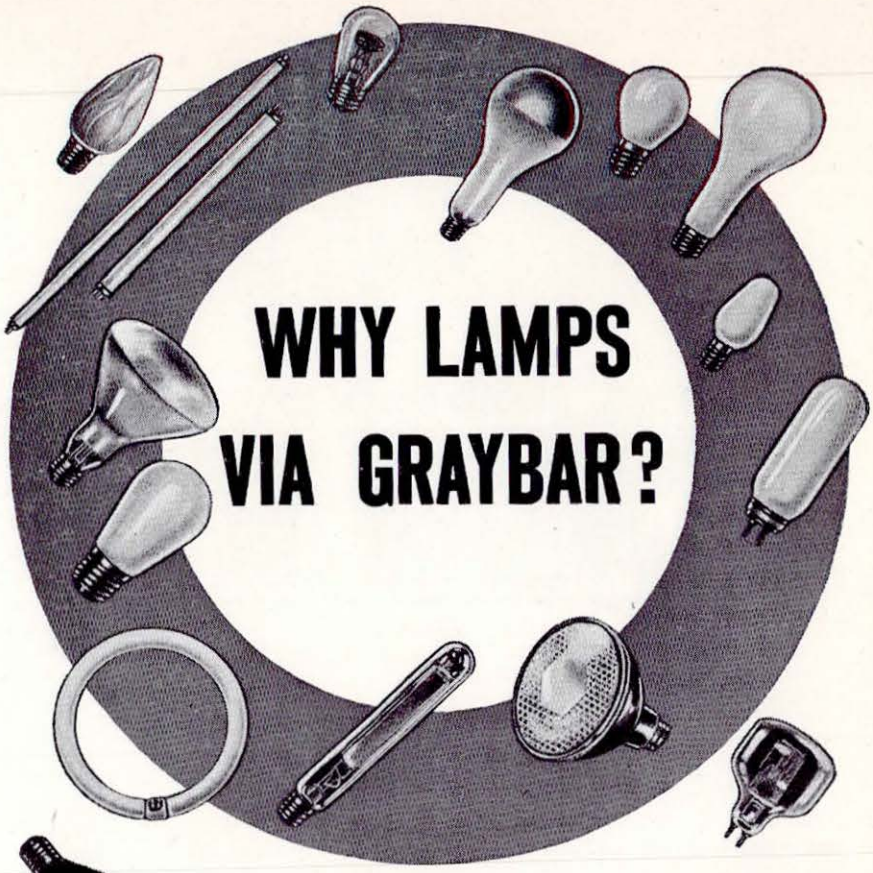
The Interstate Commerce Commission has suspended, from July 10 to and including February 9, 1950, the operation of tariff schedules whereby the Erie proposes to increase its commutation fares in the New York City area by approximately 20 per cent. The suspension order docketed the case as I. & S. No. 5668 and assigned it for hearing before Examiner Burton Fuller at Newark, N. J., on July 7. The commission had previously suspended, from June 1 until December 31, an earlier Erie proposal to increase the same fares by 18 per cent (see *Railway Age* of June 4, page 56).

International C. of C. Considers Transportation Problems

Some 500 business leaders from 28 countries gathered at Quebec, Que., from June 13 to 17 for the 12th biennial congress of the International Chamber of Commerce, to examine global economic problems, with special attention to the question of international transport, and, in particular, to the role of railways in assisting towards world recovery.

The chamber recognized that with the resumption of railroad service throughout war ravaged areas relevant international conventions must be put into force once more to guarantee the most efficient use of railway transport. It decided to continue close contact with the Union of Railways (U.I.C.), in order that it may be kept informed of work progress and may assist that organization by communicating to it the views of users represented in the chamber.

Another problem raised was the fact



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Graybar maintains lamp stocks near railroad centers throughout the nation. With a single order, you can obtain all the kinds of lamps you need.

Graybar's Railroad Specialists understand your needs. Our Lighting Specialists are qualified to give expert advice in the choice of filament, fluorescent, or mercury lamps and lighting units for yards, platforms, roundhouses, pits, tunnels, stations, shops, or offices. *These men can impartially recommend the correct lighting equipment for your needs, from the most complete selection of lamps and lighting units available anywhere.*

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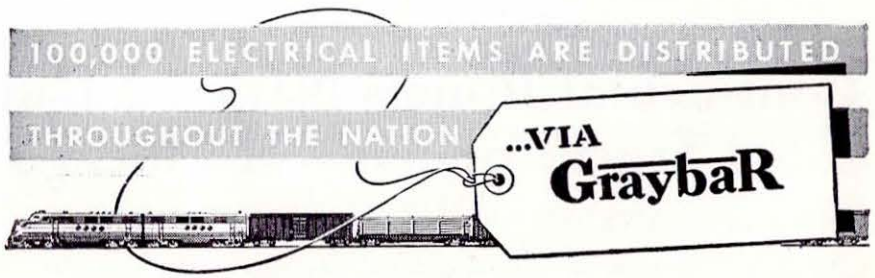

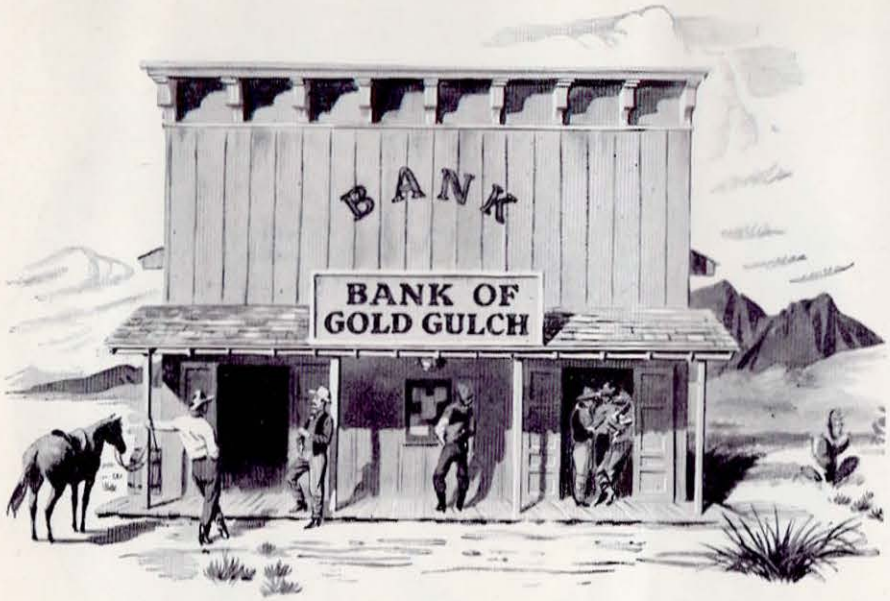

A link with the Past . . .

"BANK OF GOLD GULCH," an authentic reproduction of a colorful banking house of the Old West, has been constructed and is being maintained by the Continental Illinois Bank as part of a typical mining town at the Chicago Railroad Fair this summer, from June 25 to October 2.

In the atmosphere of this old-time bank you will have an opportunity to see many interesting exhibits of the Gold Rush Era—loaned to us by our many friends in the West—including prospectors' equipment and the story of gold from ore to minted coin . . .

All of which is a reminder that Chicago has grown from a frontier outpost to a great city and that banking practices have seen many developments in the 92-year history of the Continental Illinois Bank—92 years of friendly service to the community and the nation.

★ ★ ★

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Continental Illinois National Bank and Trust Company of Chicago

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that neither for questions of a governmental or non-governmental character is there any organization concerned with inter-European railway problems. The chamber urged that the spheres of action of the various existing organizations be clearly defined in efforts to reach greater efficiency in the field and to assist in the success of the Marshall Plan.

L. C. Sprague, president of the Minneapolis & St. Louis, was a member of the American delegation, to represent the railroads of the United States.

Spal to Join Staff Of House Committee

Sam G. Spal, statistical analyst of the Bureau of Transport Economics and Statistics, Interstate Commerce Commission, will become a member of the staff of the House committee on interstate and foreign commerce on July 1. His appointment will fill the vacancy on the committee's staff which was created by the resignation of Dr. John H. Frederick, who is now associated with the Transportation Association of America.

Mr. Spal was graduated from the College of the City of New York with a B. S. degree in 1937, and was awarded an M. A. degree in 1941 by the American University, Washington, D. C., where he majored in economics and transportation. He has been a member of the I.C.C.'s staff since 1935.

Military Travel Agreement Has Been Renewed

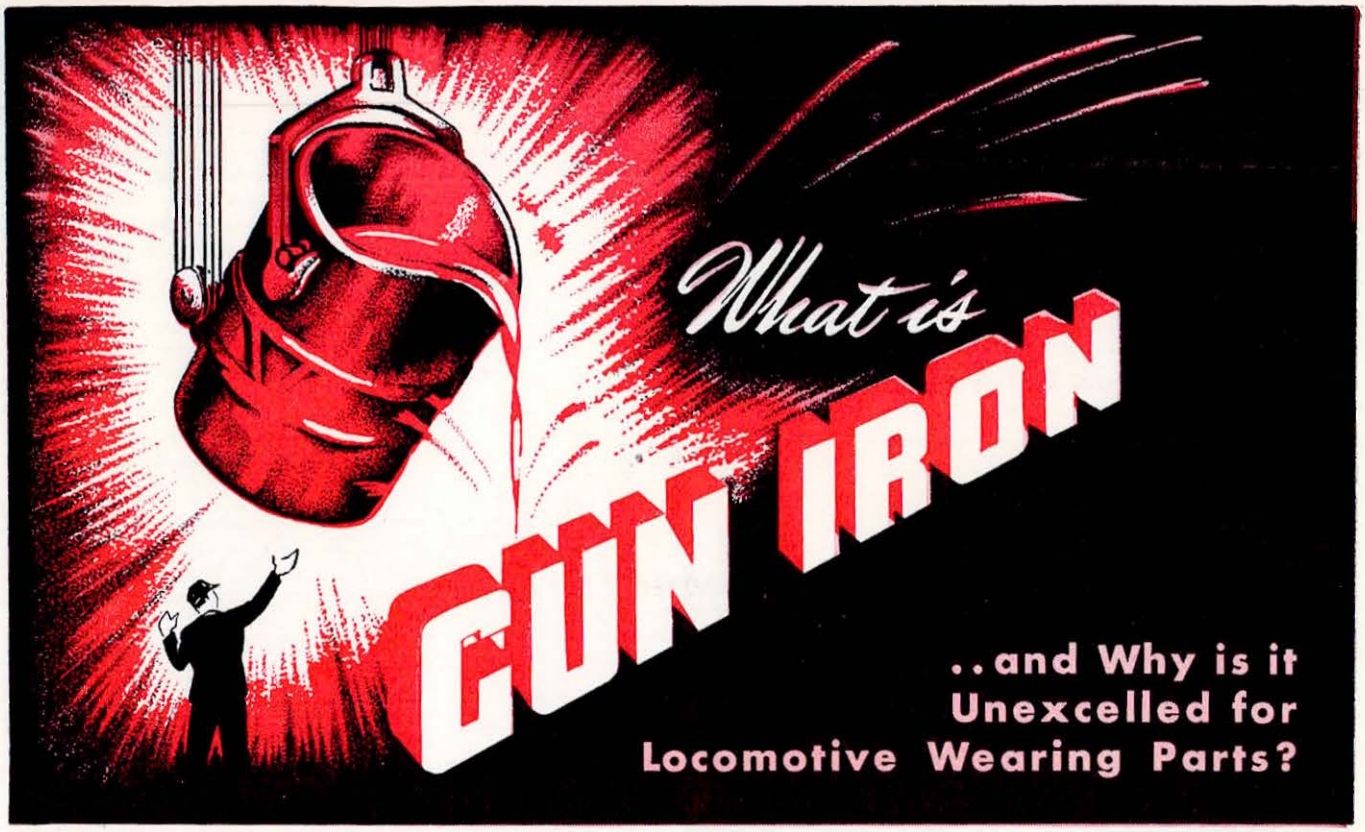
Military agencies have accepted the bid of the railroads to carry all military passenger travel at fares 10 per cent under the regular commercial fares for the fiscal year ending June 30, 1950, E. B. Padrick, chairman of the Railroad Interterritorial Military Committee, announced on June 22.

Similar agreements for discount on military travel have been in effect since 1914, Mr. Padrick explained, and the 10 per cent reduction just agreed upon is the same which has been in effect since the end of the second World War. Under this agreement, the railroads during the second World War handled 97 per cent of the military travel, and since the war have handled more than 90 per cent. Mr. Padrick estimated that substantially this percentage of military travel will move by rail under the new agreement.

Meanwhile, the Air Transport Association has announced that its Air Traffic Conference will publish, effective July 1, a tariff granting a 10 per cent discount on basic airline fares for all passenger travel purchased by military agencies. "The filing of the tariff," the announcement said, "is pursuant to an urgent request by the military agencies and is the result of several months of negotiations by the A.T.A., airline and military officials."

The reason for the move, according to M. F. Redfern, executive secretary of the Air Traffic Conference, "is the indication from the military agencies that

News Department continued on next left-hand page



Hunt-Spiller Gun Iron is not new. In fact, its original development dates back to the founding of this company in 1810. Through the years, it became widely known in the production of guns of many types, including the famous Dahlgren cannon mounted on the U.S.S. *Monitor* of Civil War renown. Hence, the adoption of the term "Gun Iron."

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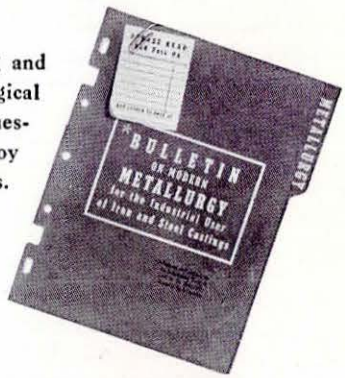
In its application to steam and diesel locomotive parts which are subject to friction—many of which are cast and machined by Hunt-Spiller—Gun Iron's dense, evenly-graphited structure and uniform strength and hardness offer superior resistance to heat, wear and distortion. These same characteristics also assure more consistent machineability in the shop and more reliable and economical performance of the parts in use.

This interesting and highly informative metallurgical bulletin answers many questions as to what metal or alloy is best for specific purposes. Your copy will be sent, without obligation, upon request on your company letterhead.



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such a discount will result in much greater use of commercial air transportation by the military agencies, which formerly under agreement, were restricted almost exclusively to the use of rail transportation." The A.T.A. announcement also said:

"It is understood that the agreement with the rail carriers, which is to remain in effect during fiscal year 1950, still retains some preferential features for rail transportation, but the airlines have been given full assurance that rules, regulations and instructions to be issued by the military governing the purchase of passenger transportation will serve to place the selection of air transportation on a fair competitive basis, which has not been the case heretofore.

"Officials estimate that the granting of the 10 per cent discount to military personnel using travel requisitions, will raise the percentage of all military travel now carried by air from between 2 and 4 per cent to between 10 and 12 per cent of the total. It was revealed that the Office of the Secretary of National Defense has directed the Munitions Board to make a comprehensive study of all traffic problems of all military agencies, with a view to better understanding of the types of travel purchase arrangements which should be consummated beginning with the fiscal year 1951.

"To facilitate the handling of the new tariff and the routing operations for military traffic traveling by air, the Air Traffic Conference has established a Military Bureau at its headquarters, of which Frank Macklin will be director. The Military Bureau will handle the routing of group movements of passengers with accompanying cargo and sizeable cargo shipments presented to them by the military agencies."

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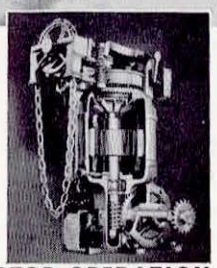
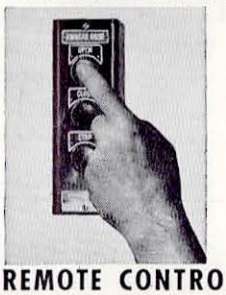


MOTOR OPERATION



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May Revenues 7.8 Per Cent Below Those of May, 1948

From preliminary reports of 83 Class I roads representing 81.7 per cent of total operating revenues, the Association of American Railroads has estimated that the May gross amounted to $599,871,886, a decrease of 7.8 per cent below the $650,305,353 reported for the same 1948 month. Estimated May freight revenues were $498,027,046, as compared with May, 1948's $543,284,615, a decrease of 8.3 per cent. Estimated passenger revenues totaled $55,298,715, as compared with $59,419,591, a decrease of 6.9 per cent. The estimate for all other revenues was $46,546,125, a decrease of 2.2 per cent below May, 1948's $47,601,147.

Shippers Should Get Into Politics, Says Board Chairman

Although "we can't take the advisory boards into politics," the members, as individuals, "are going to have to get in them," W. H. Marriott, general chairman of the Central Western Shippers Advisory Board and secretary-traffic manager of the Sioux City, Iowa, Grain Exchange, told his members at the 27th annual and 59th regular meeting of the board in Ogden, Utah, on June 7. Asserting that "a gang in Washington is moving in on our democracy"; that politicians "tell us the juicy part" of socialist programs and "bury the seamier side"; and that such schemes as the Missouri River Authority in the board's territory would place overwhelming economic control in the hands of a few appointed—not elected—men; the speaker claimed it was the shippers' job to fight against such tendencies—including nationalization of the railroads. Price support for farm products and legislation by pressure groups also came in for his denunciation.

Although it is becoming increasingly difficult to keep up interest in the car efficiency program, the board's executive committee agreed to continue the board's vigilance campaign, in view of continued tightness in some types of equipment and the likelihood of a bumper crop plus jammed storage facilities. At the behest of Frank R. Russell, traffic manager, Denver Dry Goods Company, Denver, Colo., there was established a sub-committee of the railroad contact committee, working closely with the l.c.l transportation committee, which will undertake,

among other things, to study delays to merchandise and take action (with connecting roads outside board territory, if necessary) to remedy them. This committee will encourage expansion of through package cars; look into further coordinated truck service in local and branch line operations and for cross-town transfer; advise on further mechanization of freight stations; and give consideration to the possibilities of open routings for improved service In open session, Mr. Russell expressed the opinion that the forwarders take the cream of l.c.l. traffic, while the truckers put on prohibitive rates and high minima to discourage undesirable traffic. At the same time he raised the question whether rail service—"for what is left to the railroads of l.c.l."—is adequate and efficient. Improvement, however, has been made, he said, pointing out that transit time in the board's territory had decreased.

C. R. Megee, vice-chairman, Car Service Division, Association of American Railroads, said that, since January 1, the roads have reported an average car surplus of about 50,000 units. The grain movement promises, however, to bring problems, not only because it will be big, but because there is a large carry-over from last year which will have to move concurrently with the 1949 crop. Public elevators are reported to be 60 per cent occupied, compared with 26 per cent a year ago.

In his luncheon address, "What's Ahead?," H. J. Gramlich, general agricultural agent, Chicago & North Western, Chicago, described the startling new developments in scientific agriculture as evidence that change is the one thing of which we are sure.

Among the resolutions passed by the board was one expressing approval of a uniform bill of lading, on condition that its use be permissive, rather than mandatory; opposing the St. Lawrence Seaway; and recording interest in and support of Senator J. H. O'Mahoney's bill making legal the absorption of freight charges by the seller, when no collusion exists.

Railroads Receive New Passenger Equipment

The New York Central has announced that a new observation lounge car has been added to each of the twin "Ohio State Limiteds," completing deliveries of postwar passenger equipment for the overnight Cincinnati, Ohio-New York trains. The trains now consist of completely new all-stainless steel cars built by the Budd Company. The observation cars have lounge and observation sections seating 25 persons each. Each car contains five double bedrooms, four of which can be converted into two large drawing rooms with seating space for seven persons and berths for four.

Twenty modernized air-conditioned coaches and a number of other air-conditioned cars, rebuilt at the Pennsylvania's Altoona, Pa., shops, have been assigned to Pennsylvania-Reading Seashore Lines trains on regular runs be-

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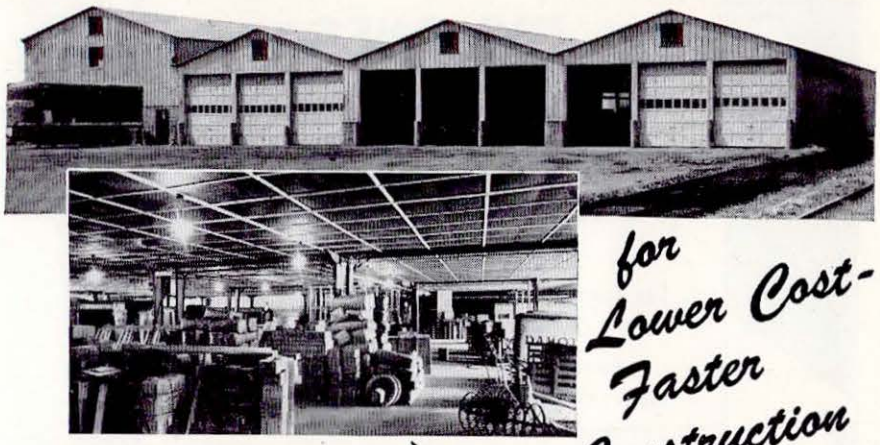

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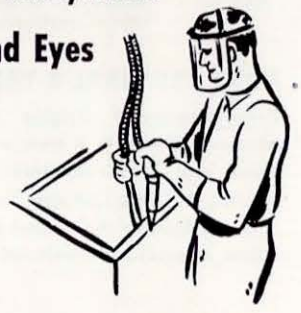

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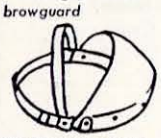
VI Headgear small browguard



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tween Philadelphia, Pa., Atlantic City, N. J., Cape May and Wildwood. "With the completion of our modernization program in the next three years the Seashore Lines will have as large a ratio of modern air-conditioned equipment as any railroad in the east," Harry Babcock, general manager, said, adding that the traveling public's reaction to the improved equipment has been "exceptionally favorable."

Atlantic Coast Line trains between New York and Florida points will receive the first of 42 new lightweight, stainless steel all-room sleeping cars about July 1, J. B. Sharpton, passenger traffic manager, has announced. The sleeping cars, all rooms of which are air-conditioned, are part of an order for 74 lightweight, stainless steel cars, including 20 coaches, 10 dining cars and two baggage cars, placed with car builders in June, 1946.

Eastern L.C.L. Case Reopened by I.C.C.

The Interstate Commerce Commission has reopened for further hearing the case wherein its report of October 11, 1948, rejected the eastern railroads' plan for increasing their rates on l.c.l. and any-quantity traffic. The reopening order resulted from the commission's "further consideration of the record" and its consideration of a petition filed recently by the interested roads.

The proceeding is docketed as No. 29770, and the further hearing will be held "at such times and places as the commission may hereafter direct." The commission's adverse report in the case was reviewed in the *Railway Age* of October 23, 1948, page 53 (see also issue of April 9, 1949, page 68).

Bickers to Succeed Cole As Secretary of N.M.B.

Robert F. Cole, secretary of the National Mediation Board, will relinquish that position at his own request on July 1, and will be succeeded in it by Thomas E. Bickers, a member of the board's staff of mediators. The N.M.B. announcement said that Mr. Cole's request that he be relieved as secretary was made "in contemplation of his present plans for early retirement from government service." It also said that, after July 1, Mr. Cole "will temporarily resume mediation of board cases in the field."

In making the announcement, the board paid this tribute to the retiring secretary: "Over a period of more than 10 years Mr. Cole compiled an enviable record as secretary of the board, and it is with sincere regret that the members of the board have approved his request to return to the field. His distinguished career has been marked by untiring effort above and beyond the requirements of the office. He leaves the secretaryship with the best wishes of not only the board and its staff but his many friends in the railroad and airline industries."

Mr. Cole was born December 16, 1883,

at Kaufman, Tex., and was in railroad service from 1904 until 1917 as locomotive fireman and engineer on the Southern Pacific. In 1917 he became a member of the Nevada Industrial Commission, and continued in that position until 1920 when he was appointed assistant secretary of the former United States Railroad Labor Board. When that board was supplanted by the U. S. Board of Mediation in 1926, Mr. Cole became associated with the latter as chief of its division of administration. He later served as a member of its staff of field mediators, the position in which he continued when the present National Mediation Board took over in 1934. He was appointed secretary of N.M.B. in 1938.

U. P. Installs 33 New Diners and Lounge Cars

Coincident with the beginning of summer vacation travel, 17 new diners and 16 new lounge cars have been placed in transcontinental service, the Union Pacific announced last week.

New cafe-lounge cars for coach passengers and diners for sleeping car passengers have been assigned to the "City of Portland," operating between Chicago and the Pacific Northwest. New diners have been placed on the "City of San Francisco," between Chicago and San Francisco, Cal., and the "City of St. Louis," operating out of St. Louis, Mo., with West Coast connections has been completely equipped with new club cars and new diners.

The "Los Angeles Limited," 48-hr. non-extra fare train connecting Los Angeles, Cal., with Chicago, has been assigned new cafe-lounge cars for coach passengers and new diners with full club-lounge cars for sleeping car patrons. In addition, two summer trains to national parks regions, the "National Parks Special" between Chicago and Denver, Colo., and the "Yellowstone Special" between Salt Lake City, Utah, and West Yellowstone, Mont., are now equipped with full lounge cars.

Transportation Problem of Top Importance to Agriculture

Because more than $2 billion was spent last year in transportation of farm food products, the transportation problem is of top importance to American agriculture, Dr. John H. Frederick, consultant for the Transportation Association of America and professor of transportation at the University of Maryland, told the annual meeting of the American Seed Trade Association at Washington, D. C., on June 23. The $2 billion transportation cost includes shipments between cities by carriers of all kinds, and represents about 12 per cent of the total marketing charges between producer and consumer, Dr. Frederick said.

"We have too much regulation," he added, "too much conflict of regulation, and a system better adapted to conditions 30 years ago. It is thought by many that the function of government in transportation extends far beyond public need and that too little is left to management.

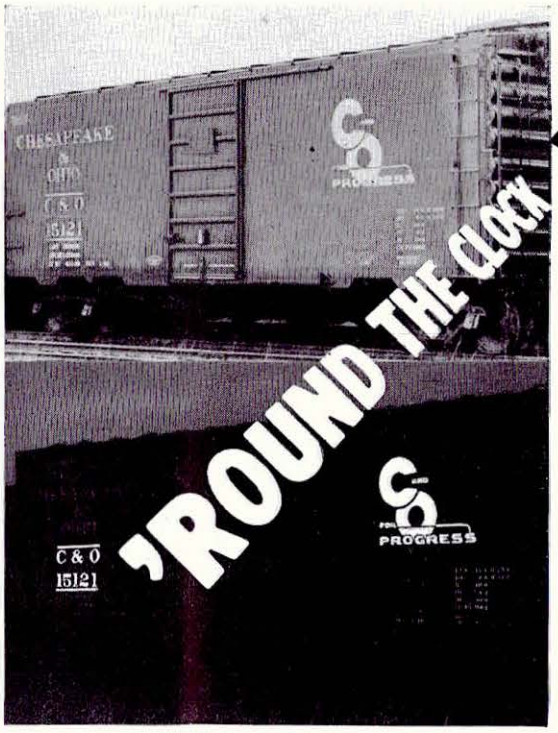
"The transportation industry—all aspects of it—stands in a critical situation. Unless trends are arrested, the day will surely come when not only the railroads but the trucks and buses, the water carriers, the airlines and even the pipelines will no longer be able to maintain themselves as part of our free enterprise system."

Dr. Frederick explained that the T.A.A., as a result of a national transportation inquiry launched by the House committee on interstate commerce, is taking definite action toward establishing a modernized transportation policy, designed to make the most effective and economical use of all transportation.

Allegheny Advisory Board

The executive committee of the Allegheny Regional Advisory Board planned to meet with the board's railroad contact committee at Pittsburgh, Pa., on June 23, to discuss matters dealing with car supply, transportation service, loss and damage prevention, and other subjects of mutual interest.

W. W. Larkin, traffic manager of the Continental Foundry & Machine Co., Wheeling, W. Va., was scheduled to preside, and W. E. Callahan, manager, open



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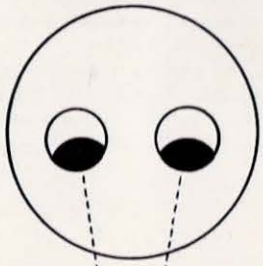

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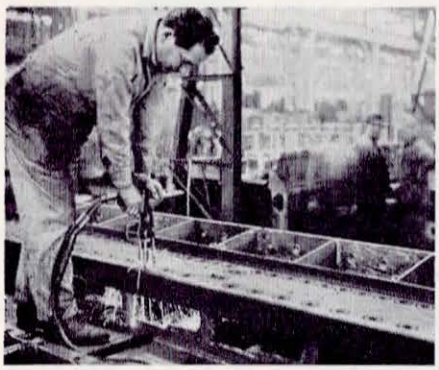

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top section, Car Service Division Association of American Railroads, Washington, D. C., was on the program for an address on national transportation conditions. A forecast of carloadings to be originated in board territory during the third quarter of 1949 was to be released at the meeting, and a number of other committee reports were scheduled for presentation.

Canadian Employees Ask Wage Increase, 40-Hour Work Week

Fifteen international brotherhoods, representing 100,000 non-operating employees of Canadian railroads, have served formal notice of demands for a general wage increase of 7 cents per hour, to become effective July 17, and a reduction of the work-week from 48 to 40 hours, without loss of pay, to become effective September 1. The two demands combined would be equivalent to a pay increase of about 28 per cent.

Serving of the formal notice was announced at Montreal, Que., by Frank H. Hall, vice-president of the Brotherhood of Railway Clerks, and chairman of the brotherhoods' joint negotiating committee. The action preceded by one month expiration of the 1948 agreement, under which some 150,000 Canadian railroad employees received wage increases of 17 cents per hour as of last July 16. Under that agreement, the average present railroad wage is $1.09 per hour; the 48-hr. work week prevails in nearly all branches of railway service except locomotive shops, where a 44-hr. week is in force.

The Canadian Brotherhood of Railway Employees is also reported to be preparing formal notice of its intention to ask a 40-hr. week and a substantial wage increase for its 25,000 members.

Cite Burlington for Safety

The National Safety Council has conferred upon the Chicago, Burlington & Quincy, in connection with its centennial anniversary celebration, a special award of honor for exceptional service to safety. The citation to the railroad states:

"The prevention of accidents to its passengers and employees has been the steadfast goal of Burlington Lines since its founding 100 years ago. The success of its resolute efforts over the century is proved by its outstanding record and the consistent improvement in that record, year after year.

"In every year since 1930, the employee casualty rate of Burlington Lines has been substantially below the average rate of all Class I railroads. And in 1948 its rate not only was 20 per cent better than in 1947, but was 35 per cent better than the average—a conspicuous achievement in a safety-conscious industry."

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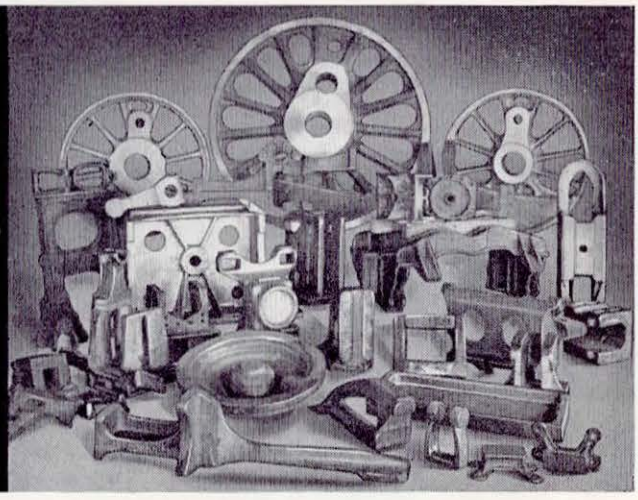

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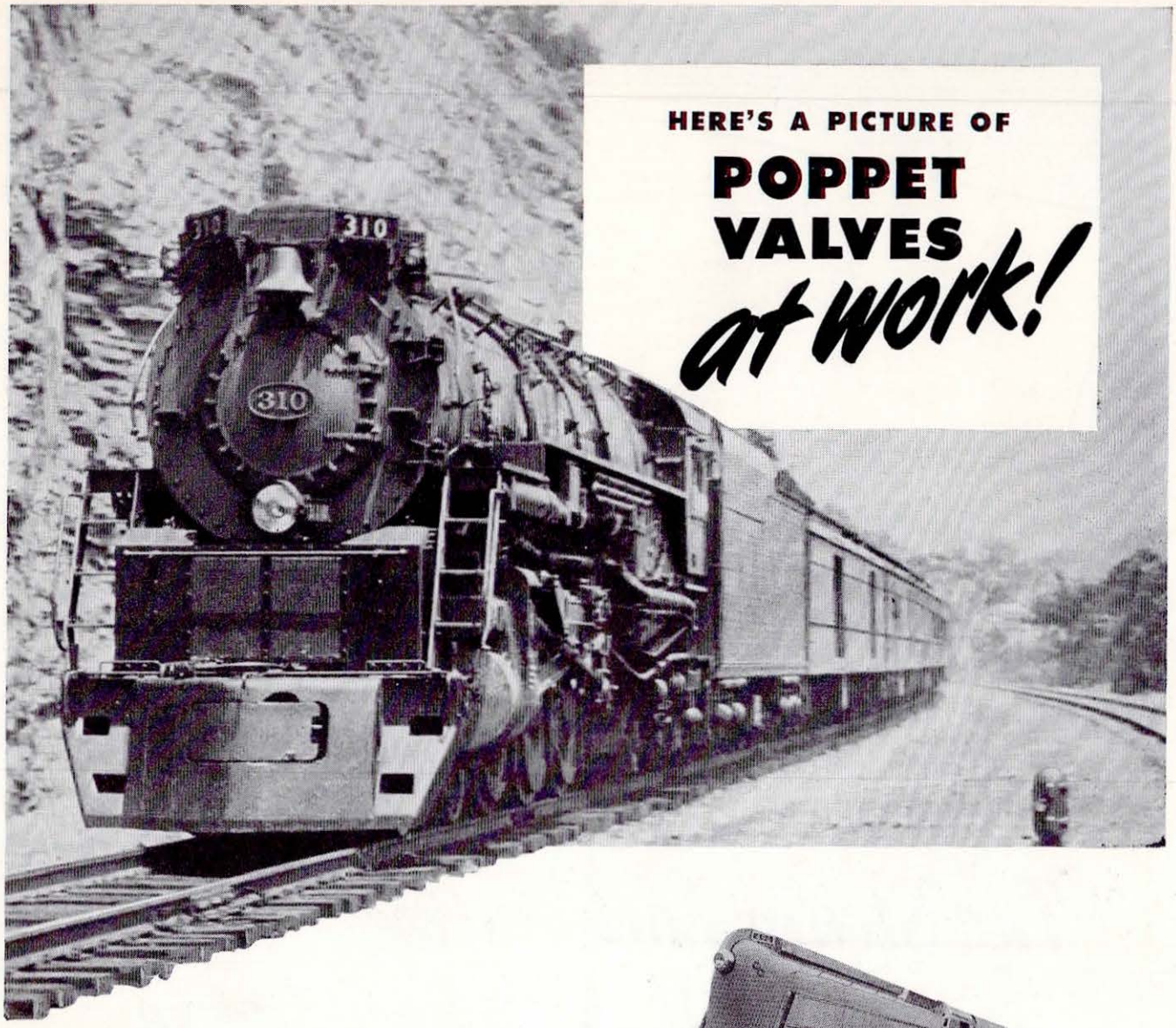

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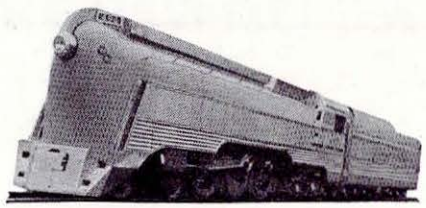

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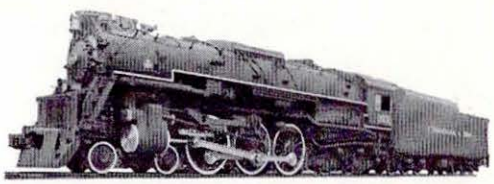

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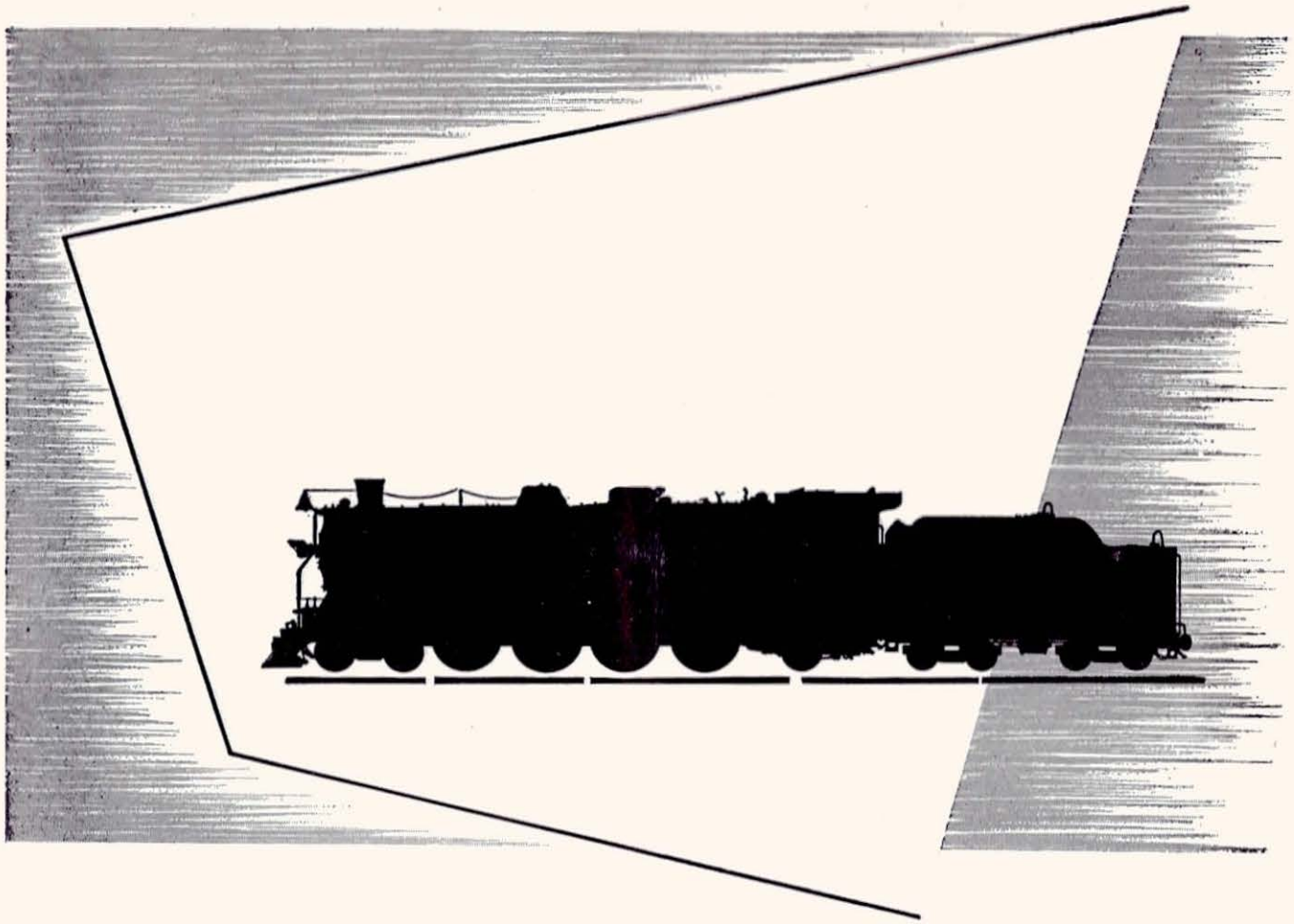

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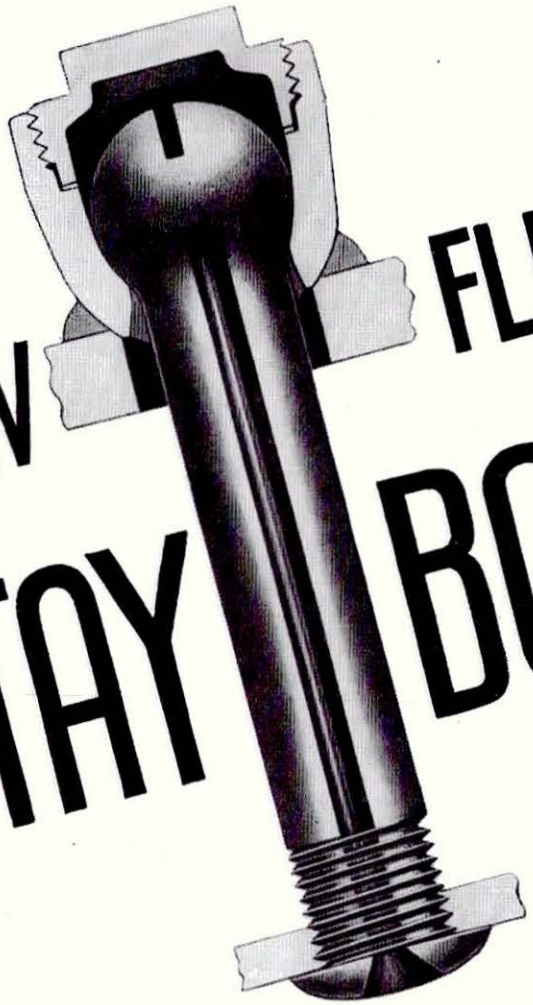

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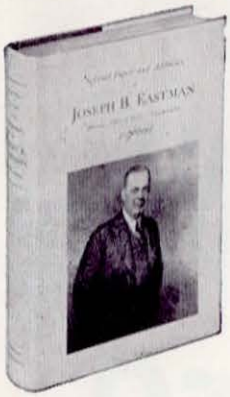

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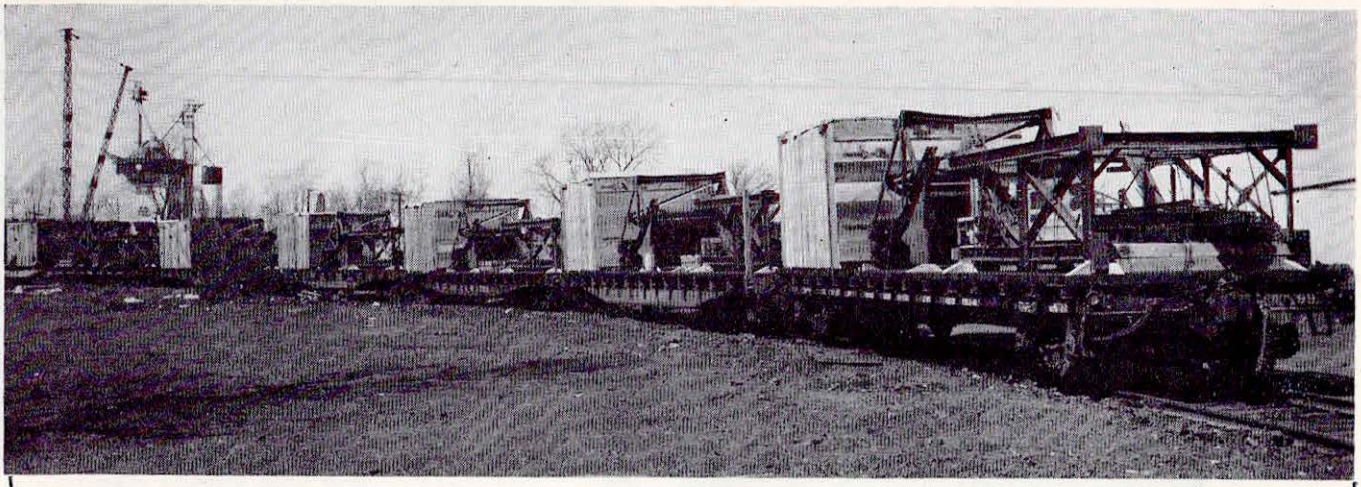

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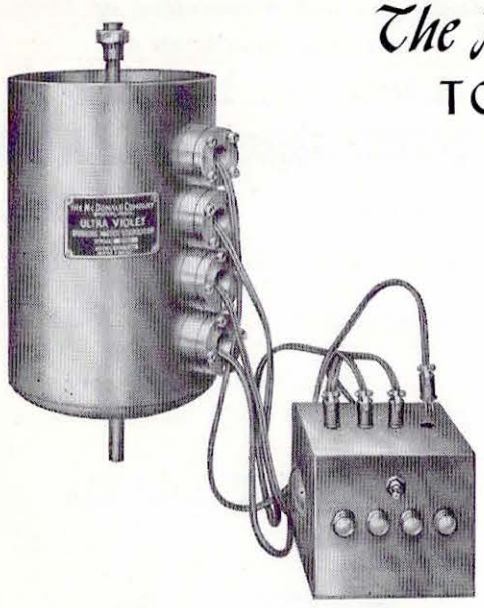

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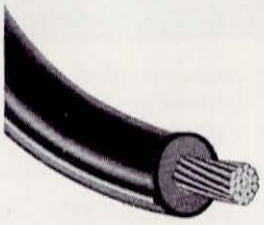

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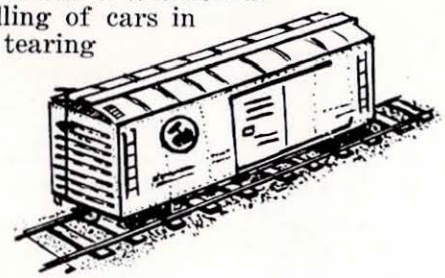

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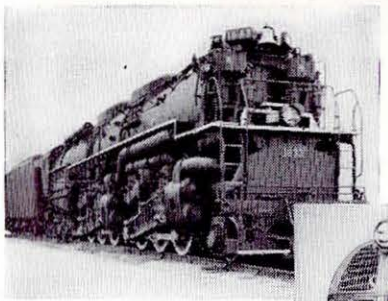

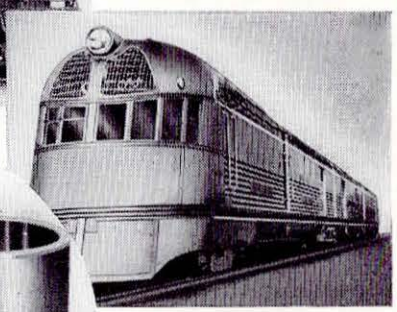

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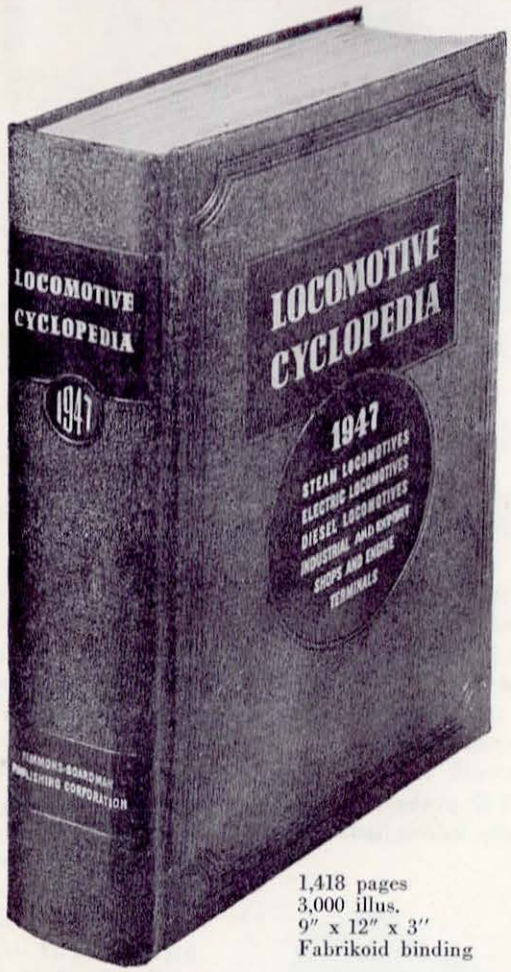

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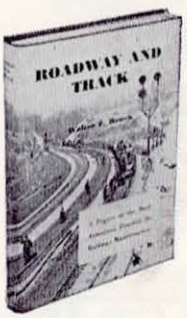

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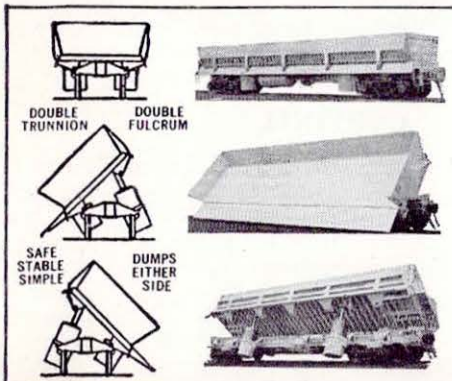

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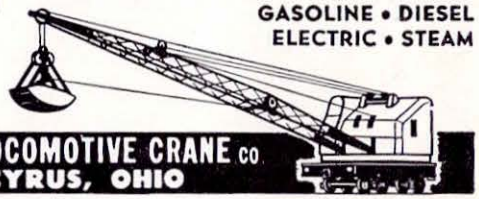

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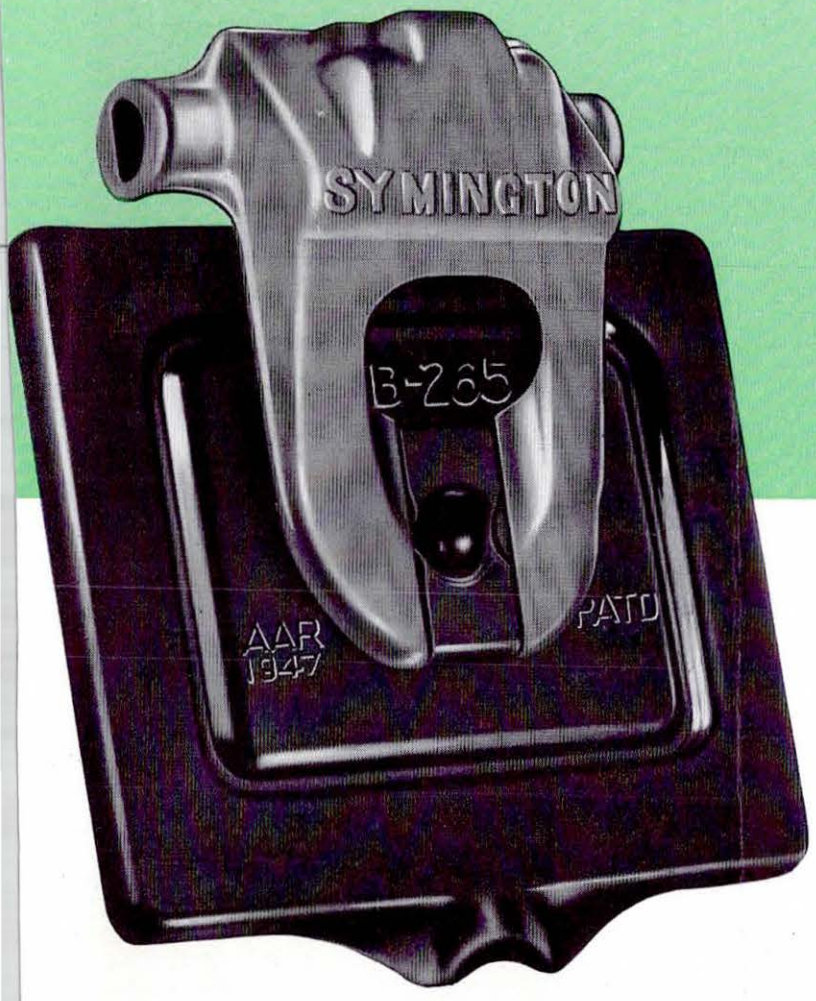

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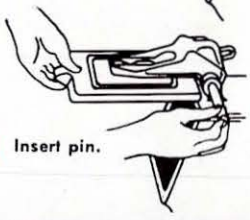

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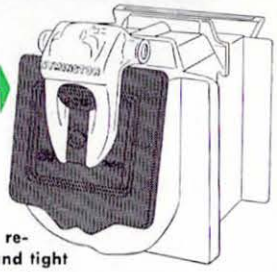

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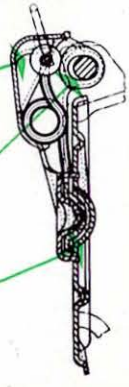

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